ENGINEERING NEWS-RECORD

OCTOBER 25, 1956

▶ Long-span towers at low premium p. 34
▶ A new way to plant 'Texas Towers' p. 40

Mason Lockwood—He wrote for criticisms of ASCE p. 69

A McGRAW-HILL PUBLICATION

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UNIVERSITY MICROFILMS IN
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ANN ARBOR MICH

This 50-foot-long section of Armco Welded Steel Pipe being lowered into a trench is part of a 5-mile water line to an industrial area at Cumberland, Maryland.

Consulting Engineer:
Robert T. Regester, Baltimore

City Engineer:
Charles R. Nuzum

Special Design Engineer:
W. E. Piper

Contractor:
The Cumberland Contracting Company

Armco Pipe Saves City 21.7% in Industrial Water Line

To supply water for the Pittsburgh Plate Glass Company's new plate glass plant being completed near Cumberland, Maryland, the city built an 18-inch-diameter water pipe line some 26,500 feet long.

Originally, four types of water pipe were considered, but choice narrowed down to Armco Welded Steel Pipe and a rigid metal pipe. When bids were opened, it was found the *Armco Pipe was 21.7%* below the lowest of three bids submitted on the competitive pipe.

Most of the Armco Pipe was supplied in 50-foot sections. This meant fewer sections to haul and handle — fewer joints to assemble. The contractor completed the job ahead of schedule.

For any water line — industrial or municipal — you will find Armco Welded Steel Pipe offers you more advantages. It is supplied in exact 50-foot lengths in diameters from 6 to 36 inches; and in wall thicknesses from $\frac{9}{64}$- to $\frac{1}{2}$-inch. Outside coatings meet AWWA specifications and a spun enamel lining will prevent tuberculation.

Ask for recommendations on your installations. Armco Drainage & Metal Products, Inc., Welded Pipe Sales Division, 5906 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

Architect's drawing of precision plate glass plant of Pittsburgh Plate Glass Company which will be supplied water through Armco Pipe.

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ARMCO WELDED STEEL PIPE

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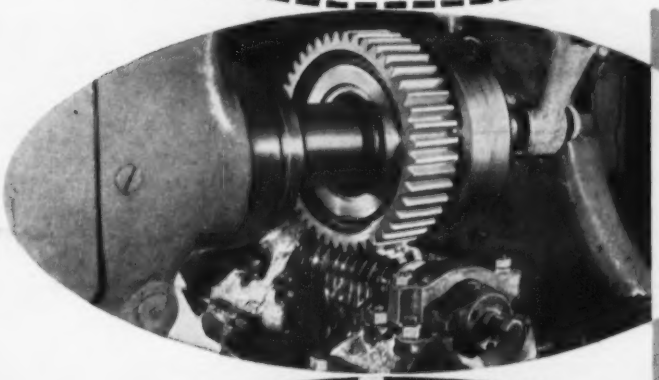

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ENGINEERING NEWS-RECORD Vol. 157, No. 17, October 25, 1956

Published weekly by McGraw-Hill Publishing Company. James H. McGraw (1860-1948), **Founder. Executive, Editorial, Advertising and Subscription Offices, McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** Publication Office, 99-129 North Broadway, Albany 1, N. Y. Donald C. McGraw, President; Paul Montgomery, Executive Vice-President; Joseph A. Gerardi, Executive Vice-President and Treasurer; Hugh J. Kelly, Executive Vice-President; John J. Cooke, Secretary; Nelson Bond, Executive Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Joseph H. Allen, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Circulation Director. **SUBSCRIPTIONS:** Address correspondence to Engineering News-Record—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address. Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. **Position and company connection must be indicated on subscription orders.** Single copies 35¢. Subscription rates—United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada $8.00 a year; $12.00 for two years; $16.00 for three years. Other Western Hemisphere and the Philippines, $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries $20.00 a year; $30.00 for two years; $40.00 for three years. Second class mail privileges authorized at Albany, New York. Printed in U. S. A.

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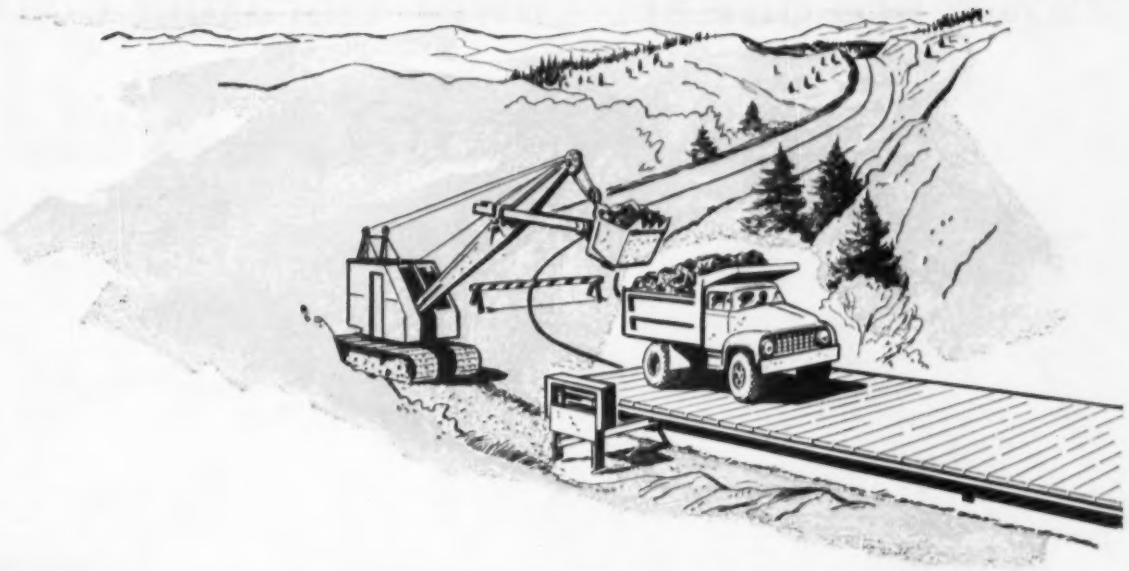
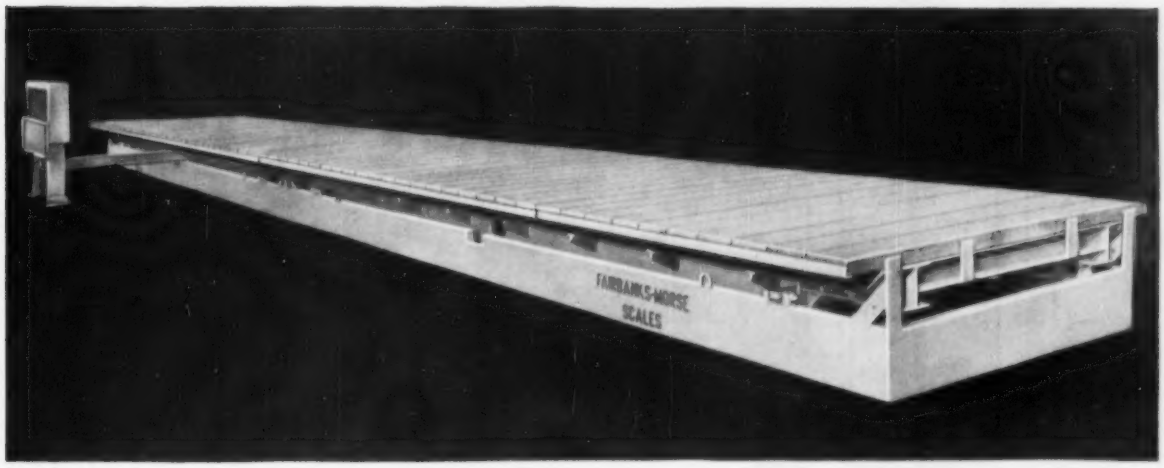


Weigh it at the job site



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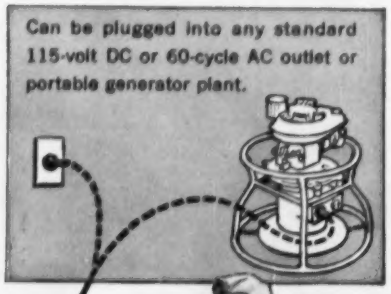

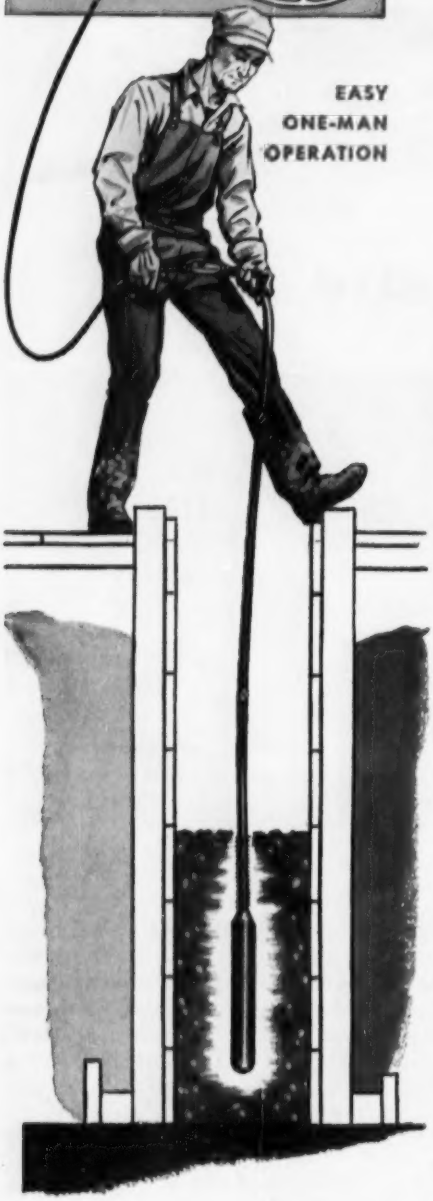

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Concrete Vibrator

Better Vibration—Greater power and higher speed permit better penetration and compaction in stiffer mixes.

A Thor First—Exclusive new vibrating mechanism is housed in a special abrasion-resisting one-piece, heavy-wall housing. Bearing loads practically eliminated. Longer bearing life and increased operating efficiency are assured. No welded construction.

15,000 R.P.M. Thor Motor—Specially designed for concrete vibrating, triple-insulated against heat and heavy loads. Thermal controls automatically shut off current in case of excess heat or overload.

Reduce Costly Down Time!—Thor's motor-in-head construction does away with heavy, cumbersome, high-maintenance flexible shafts—permits easy one-man operation.

Streamlined Submersible Switch—Can't catch on reinforcing metal because it's round, smooth, and tapered to hose diameter, concrete-proof and moisture-proof. Special operating hose is neoprene-covered and neoprene-lined to resist oil, grease, and gasoline. Flexible, easy to maneuver on forms.

Model V2-10 has 10-ft. hose and switch.

Model V2-20 has 20-ft. hose and switch.

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All models include 25-ft. 3-conductor electric cable. Ask your Thor distributor for a free on-the-job demonstration. Thor Power Tool Co., Aurora, Ill.

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Sandy soil and 24-ton loads—here's a job for new BFG Special Earth Mover tires

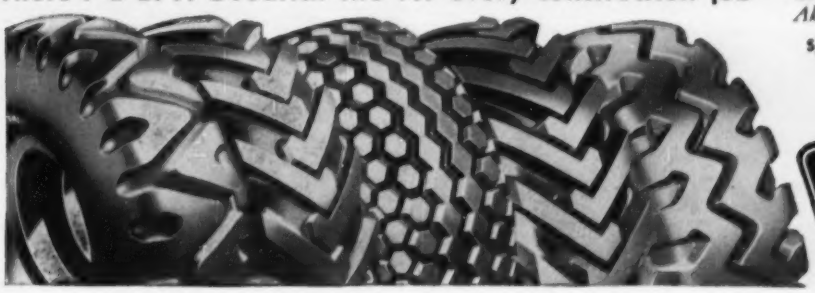
THAT giant scraper is hauling 24 tons of sand fill for troop barracks at Fort Ord, California. Plowing through sandy soil under this payload, plus the weight of the equipment, would cause most tires to bog down and become useless. That's why this contractor uses these giant B. F. Goodrich 65" Special Earth Mover tires with *all-nylon* cord construction.

Special Earth Mover tires operate at low air pressures. They conform to the soil, rolling over it rather than digging into it. And to stand the strain of this flexing, B. F. Goodrich builds the Special Earth Mover tire with an *all-nylon* cord body.

Nylon withstands double the impact of ordinary cord materials, resists heat blowouts and flex breaks. That's why B. F. Goodrich builds *all* of its off-the-road tires with an *all-nylon* body, why they can be recapped over and over!

Your B. F. Goodrich retailer has a longer-wearing, money-saving tire for every type of off-the-road work. See him today or write *B. F. Goodrich Tire Co., A Division of The B. F. Goodrich Co., Akron 18, Ohio.*

There's a B. F. Goodrich tire for every construction job



Specify B. F. Goodrich tires when ordering new equipment

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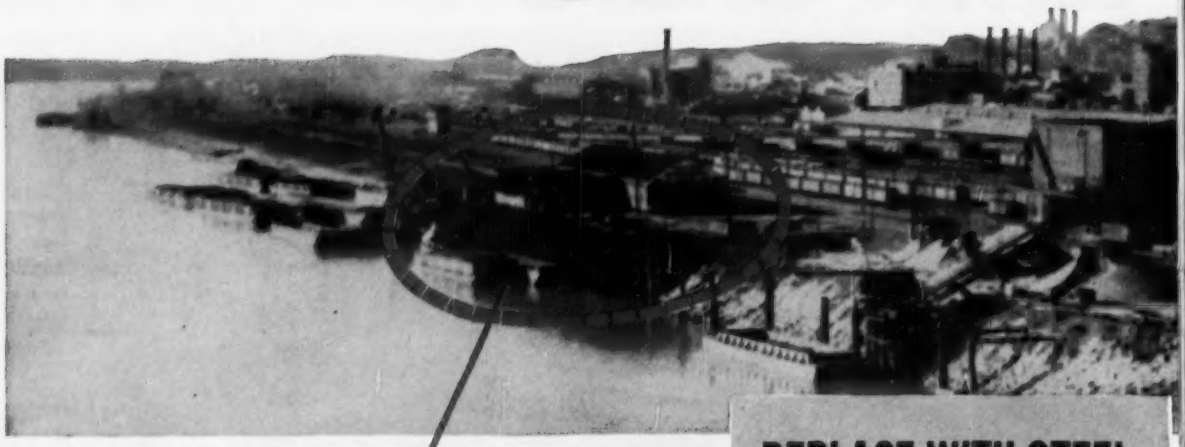
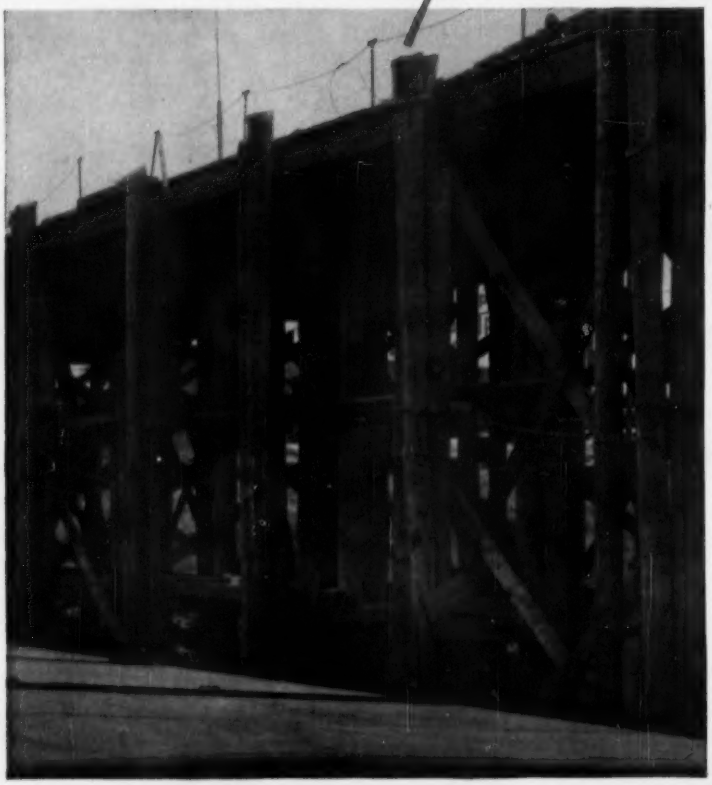
This busy old St. Louis dock given new life with





REPLACE WITH STEEL

once and for all!

Time and weather beaten, the old dock above with its wooden piling, at left, cost the owners a pretty penny in maintenance until replaced with long-lasting, *trouble-free* USS Steel H-Beam Bearing Piles, as shown at the right. If you have a similar upkeep problem, why not consider the advisability of modernizing your piers and docks with these more permanent steel piles.

On large jobs and small—under piers, docks, buildings, bridges and viaducts, these strong, easily driven H-Beam Piles have proved their ability to provide a secure means of carrying foundation loads into stable mediums lying at great depth. Their capacity for high unit loads, both vertical and horizontal, permits fewer driving operations for a given load. USS Steel H-Beam Bearing Piles are easy to splice, eliminate jetting, and withstand rough handling.

BELOW: The old wooden floor of the dock was replaced with serviceable USS Multigrip Steel Floor Plates.

USS Steel H-Bearing Piles

Mississippi Valley Barge Line figures new steel foundation for this important pier will pay for itself in about 20 years!

Time, weather, and the erosive waters of the turbulent Mississippi made maintenance of this important old St. Louis pier a costly proposition. Frequent repairs interfered with the profitable operation of this normally busy, and often crowded, dock.

Finally fed up with such periodic inconveniences, its owners, the Mississippi Valley Barge Line Company, decided to replace the original wooden piles supporting the 195'6" x 40' dock with steel bearing piles. They figured that the permanence of steel would prove more economical than wood when pro-rated over a 20-year period.

The modernization job was done by Massman Construction Company, Kansas City, Missouri, who chose USS Steel H-Bearing Piles for the heavy-duty foundation. One hundred and sixteen tons of CBP-124 (12"—53#) steel H-piling in lengths of 60' and 70' were used to support the rebuilt dock. The new steel piles were driven to refusal at a depth of about 35' into coarse sand and gravel.

The company also replaced the old timber flooring with USS Multigrip Steel Floor Plate. The resulting improvement is a sturdier, longer-lasting dock—one that will more than pay for itself in the practically maintenance-free service it gives.

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USS Steel H-Bearing Piles USS

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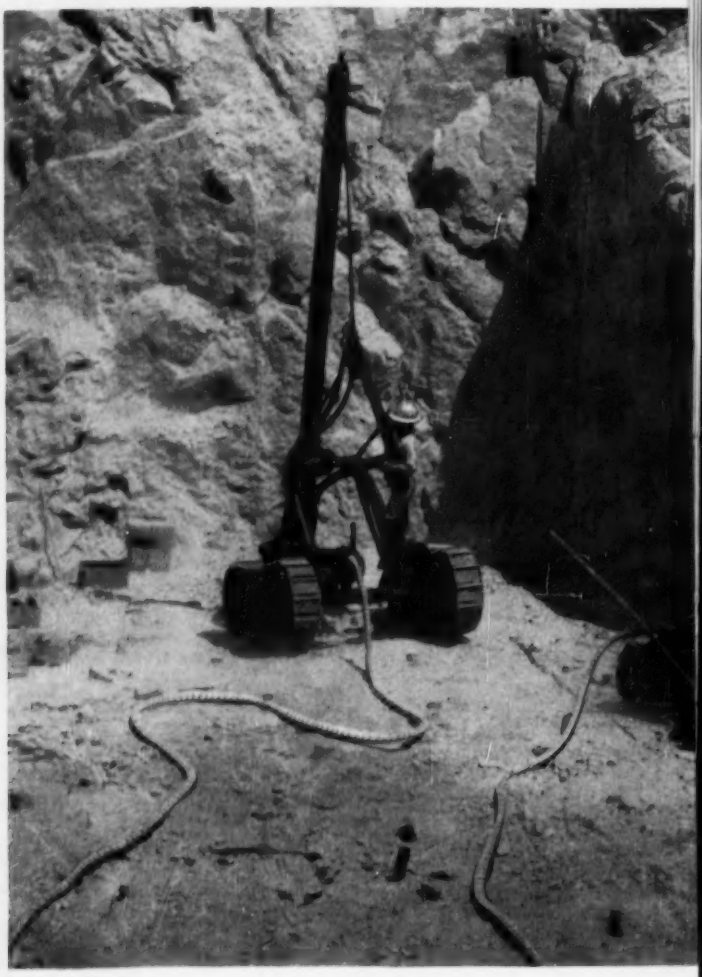
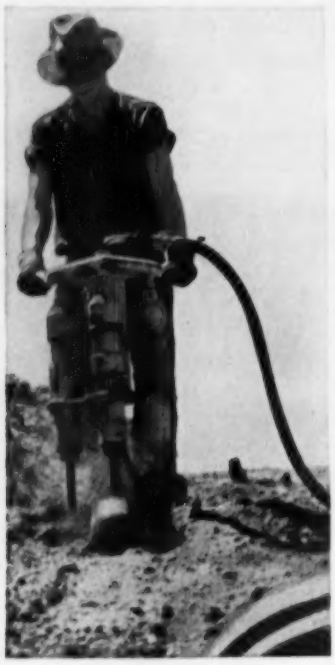


Practically a one-man tamping gang, this CP Super Triplex Backfill Tamper is a "three-legged stomper" that really packs dirt.



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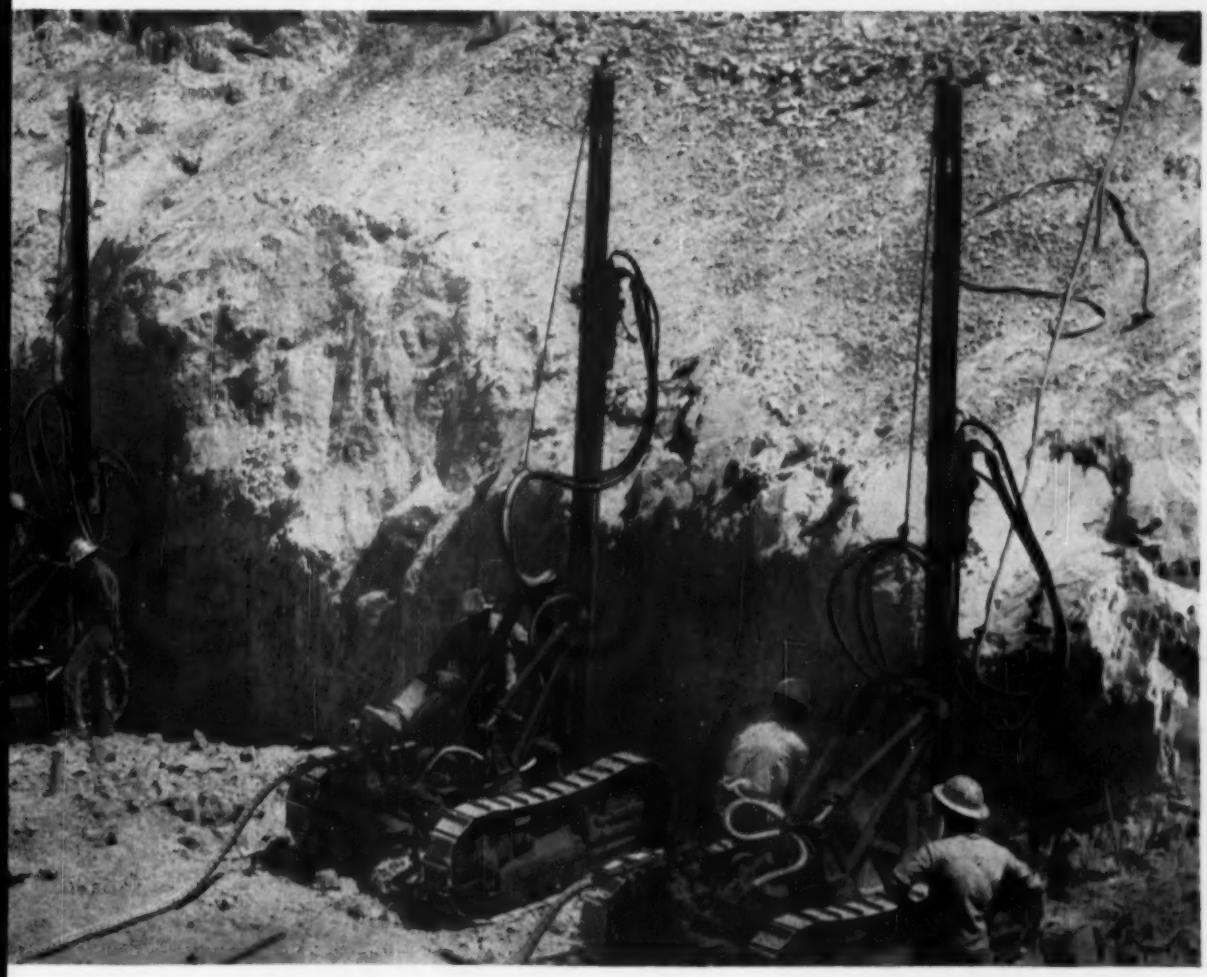

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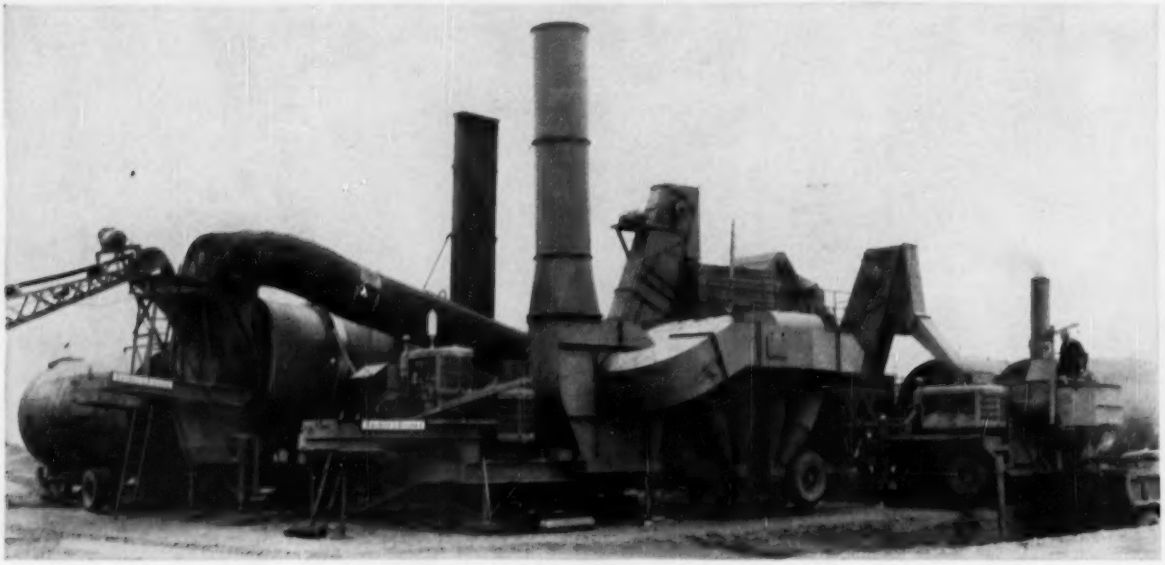

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Reader Comment

Failure Report Clarified

SIR—This letter is submitted following numerous inquiries made to our office in connection with the article, "Failure Sparks More Studies" (ENR Sept. 27, p. 28). To eliminate the confusion indicated by these inquiries, we would like to clarify the following points.

1. As noted in the article, a 3,000-sq-ft-section of roof collapsed in one of the warehouses at Robins AFB, Macon, Ga., on Sept. 5, 1956, as the result of the failure of one span in each of two adjacent reinforced concrete rigid frames. Since the frames that failed were built in 1954, they do not contain the reinforcement as revised after the Wilkins AFB collapse, nor do they contain the reinforcement as required by the current (1956) ACI building code. They were of the same design as the frames that collapsed at Wilkins AFB on Aug. 17, 1955 (ENR Jan. 12, p. 21, and (CIVIL ENGINEERING, Feb., 1956), except that top longitudinal steel and nominal stirrups had been added in the central portion of the span where such reinforcement was not previously present.

In reference to the general agreement among those directly involved in the original study, the summary of the report submitted by Ammann & Whitney to the Corps of Engineers in January, 1956, states that: "although the addition of such reinforcement is normally considered to be desirable and conservative design practice, the cracking which has been observed in the AMC Warehouse frames with the March 1954 revised reinforcement (as per collapsed frames at Robins AFB, Macon, Ga.) indicates that it does not eliminate the basic difficulties . . .".

2. References by the consultants to "faulty design assumptions" and "overestimation of tensile strength of the concrete" were made with respect to general practice in the U. S. and not with respect to the work of the designing engineers, L. P. Kooken Co., Baltimore, Md., in particular.

3. Studies are being made to relate this latest collapse at Robins AFB, Ma-

Engineering News-Record welcomes expression of opinion from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance.

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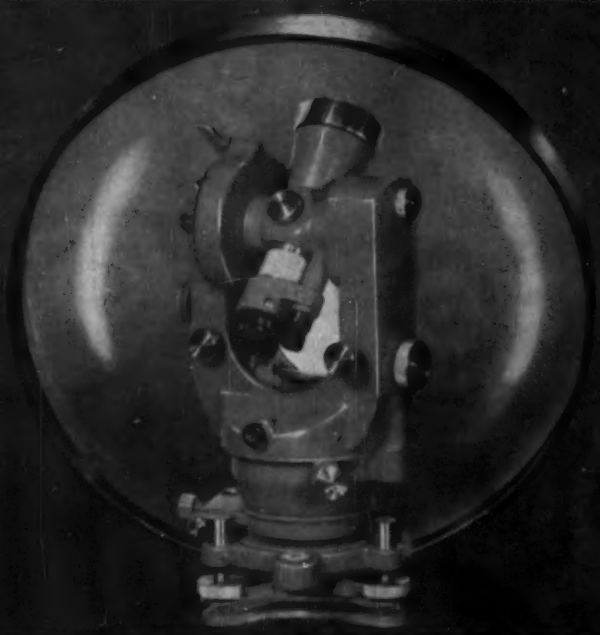

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ALLIED SEAL

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con, Ga., to the earlier findings and to review those findings in light of this collapse. Although general research is being pushed to improve design techniques, there is full confidence by all concerned in the structural adequacy of properly detailed and constructed continuous frames of reinforced concrete.

EDWARD COHEN
Associate
Ammann & Whitney
New York 11, N. Y.

More Facts and Less Theorizing

SIR—When concrete construction fails and collapses 18 months after being put into use (ENR Sept. 27, p. 28), it is high time that an explanation be found to account for such disastrous performance. Not only is there the Wilkins AFB warehouse failure of similar character to the one at Robins AFB, but another failure of past years also fits into this pattern.

It will be recalled that concluding the great rigid-frame dither of the '30s, research was carried on at the University of Illinois as a joint enterprise of the university and the Portland Cement Association. Two rigid-frame bents of 48-ft span and 18-in. width were built and tested, and results were presented under the somewhat brave title, "Tests of Rigid Frame Bridges," rather than Tests of Slices of Rigid Frame Bridges. One of these frames suddenly failed while being tested, shearing in the main span near a point of contraflexure. Unit shear was nominal—72 to 73 psi. It was an extraordinary occurrence. But being of a puzzling nature and no explanations being readily available, it was speedily obscured by other matters and interests.

In your illustration, note how bottom bars ruptured the light stirrups and tore the concrete off the haunch of the standing structure on the left. No stirrups show in the inclined zone of fracture, although one appears at some distance from this inclined zone in the top of the fallen concrete. At the top of the standing, but broken, beam the exposed and protruding bars appear to have terminated all at the same point.

Years ago, W. F. Way and the writer examined with polarized light a loaded glass beam at the University of Washington. The apparatus was very simple, even crude, and yielded only the direction of principal stress at the point under examination. Intensity of stress could not be measured but had to be judged by the observed intensity of the light. The conventional beam theory was confirmed everywhere—except at the ends of the glass beam. There,

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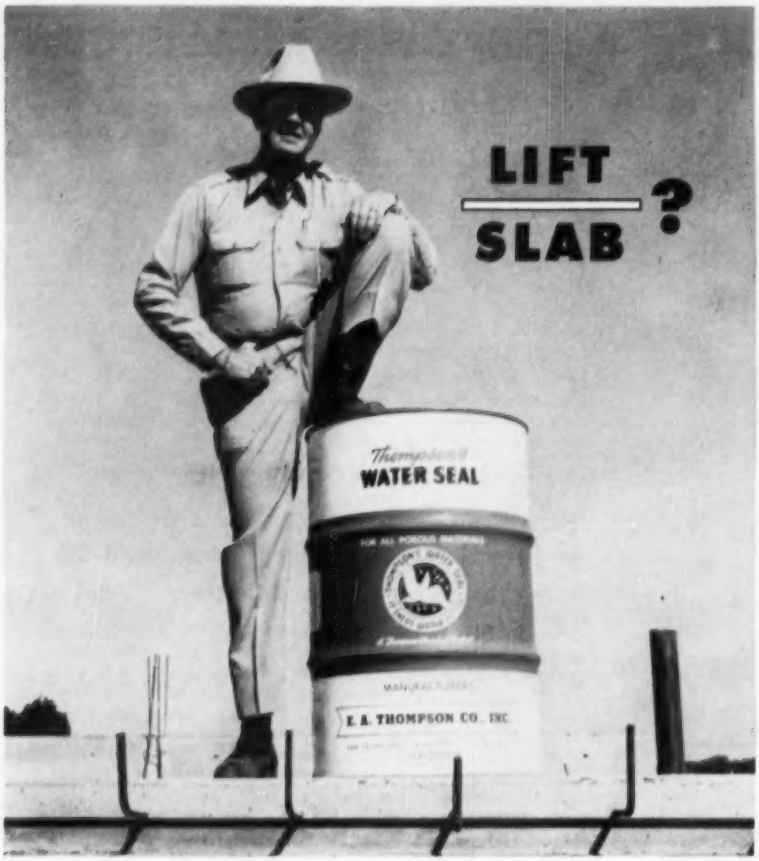

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. . . Reader Comment

quite at variance with beam theory, for a distance about equal to the depth of the beam, there was no stress to be observed at the top of the beam, whereas at the bottom and close to the support there was sharply defined stress. This combination of stress and no stress necessitates inclined compressive stresses in the web, as in the end post of a truss delivering all loads to the bottom chord.

Does anything of an analogous character develop at the contraflexure points of a continuous beam? Is it necessary at these points to provide adequate and anchored reinforcement for lifting the reaction load of the central "simple beam" section to the top of the end cantilevers?

Assuredly, the writer does not know the answers to these questions, but a failure 18 months after construction demands more explanation than a marshaling of indefinite reasons and possibilities. Just what is wrong and what measures shall be taken to prevent the recurrence of this trouble? In lieu of defining the differences between tweedle-dee and tweedle-dum, here is a field for testing laboratories to perform some truly vital research.

HOMER M. HADLEY
Consulting Engineer
Seattle 1, Washington

CALENDAR

Society for Experimental Stress Analysis, Deshler-Hilton Hotel, Columbus, Ohio, Oct. 31-Nov. 2.

Cleveland Engineering Society, Construction Div., fourth annual construction conference, CES headquarters, 2136 E. 19th St., Cleveland, Nov. 12.

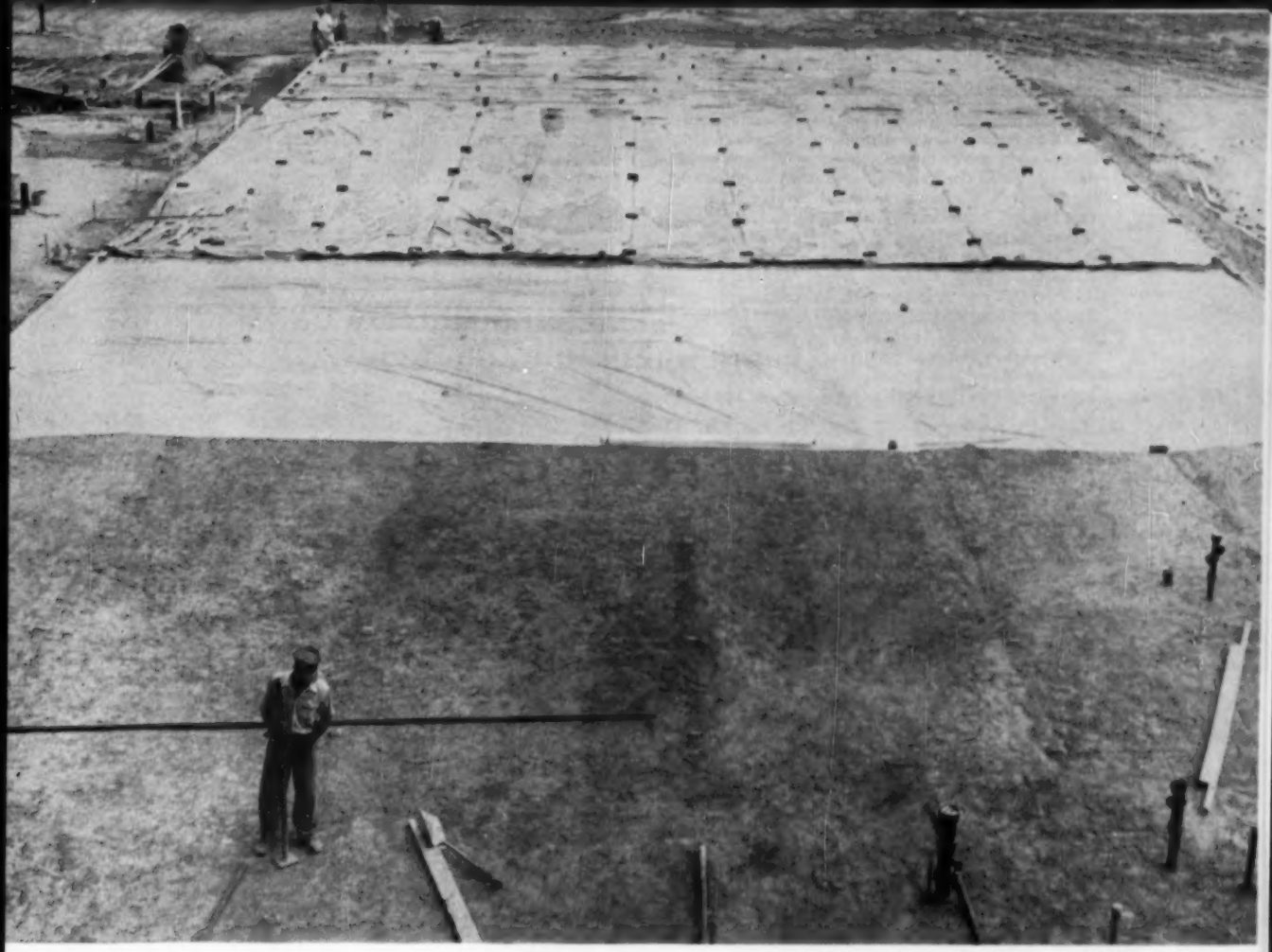
West Coast Noise Symposium, third annual meeting, noise in buildings, Institute of Aeronautical Sciences Auditorium, Los Angeles, Calif., Nov. 12-13.

American Public Health Association, annual convention, Convention Hall, Atlantic City, N. J., Nov. 12-16.

Building Research Institute, conference on windows and glass in the exterior of buildings, United States Chamber of Commerce, Washington, D. C., Nov. 14-15.

Fourth Illinois Structural Engineering Conference, discussions on steel and concrete specifications, one-story-building foundations and high-strength structural steel, University of Illinois, Urbana, Dec. 3-5.

American Road Builders Association, annual meeting and road show, Chicago Amphitheater, Jan. 28-Feb. 2.



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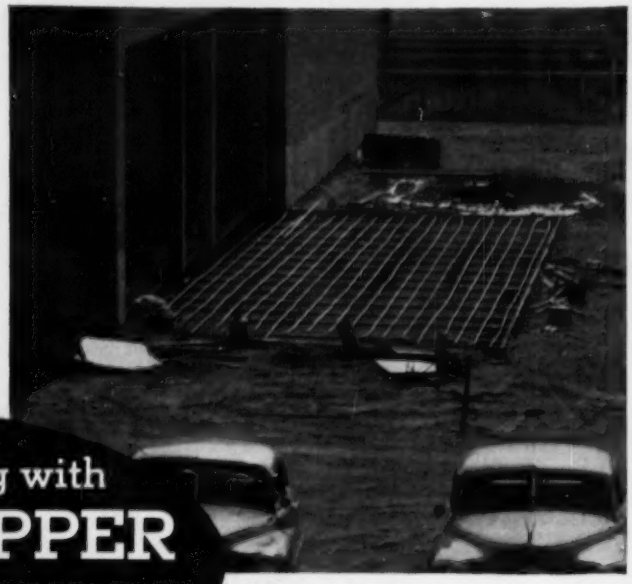
Shown here are four of the many, many ways that Revere Copper and Aluminum are being used in the construction field. In this type of work both designing and construction engineers have found that Revere's Technical Advisory Service is often very helpful. In the case of the Hungry Horse Dam shown directly below, the compound expansion and contraction of the concrete necessitated an elaborate system of copper joints. Revere Technical Advisors worked with the engineers to obtain the best possible system of joints. It is this kind of assistance, backed by a storehouse of knowledge spanning 155 years experience in working with non-ferrous metals, which may prove useful in the projects now on your boards.

what they're doing with REVERE COPPER and ALUMINUM



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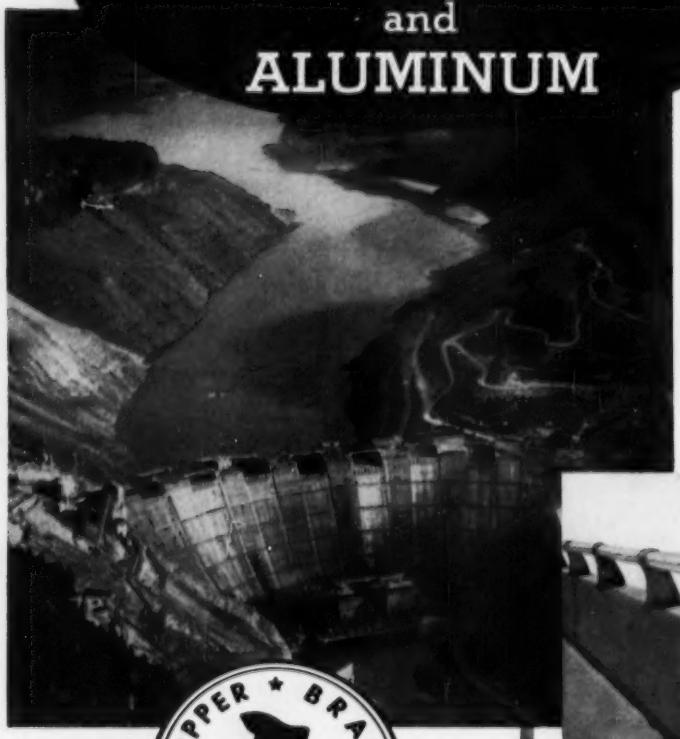

HUNGRY HORSE DAM, Montana. On this $108,000,000 project more than 200,000 lbs. of 24 oz. Revere Soft Resquared Copper Strip were used as water seals. Engineers on the job chose copper because of its overall economy, its ease of handling in installation, its outstanding flexing qualities and its resistance to corrosion.

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ENGINEERING NEWS-RECORD

Vol. 157, No. 17 October 25, 1956

Number of copies printed in this issue: 75,762

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THE CONSTRUCTION WEEK

REPERCUSSIONS OF FATAL COLLAPSE—Legal action against the contractor and pressure for safety legislation followed last week in the wake of the collapse Oct. 3 of a flat-plate concrete building in Jackson, Mich. (ENR Oct. 11, p. 24). Injured workmen and relatives of some of the 10 killed were preparing damage suits reported to exceed $5 million against the general contractor, Herlihy Mid-Continent Co., of Chicago. In a pretrial discovery deposition scheduled for Federal Court in Detroit, plaintiffs will reportedly question the curing time allowed for the concrete in the lower floors of the 4-story building.

MACKINAC CABLE SPINNING OVER—Final wires in the 8,600-ft main cables of Mackinac Bridge were unreeled last week. Completing the job in what is described as record time, four "spinning wheels" unwound in two-shift operation beginning last July a total of 41,000 miles of 0.196-in. galvanized steel wire (ENR July 26, p. 25). Compressing and banding will finish up this season's work on the cables, but construction on the approach spans will continue as long as weather permits.

DIAGNOSIS OF BUILDING DAMAGE—A 44-ft layer of clay and quicksand is at the bottom of Elk Point's troubles with shifting buildings, says South Dakota state geologist, E. P. Rothrock. Rothrock undertook a study in the Missouri River town after soil settlement cracked the walls of a high school and damaged other buildings last month (ENR Oct. 11, p. 33). Discounting speculation that river-level fluctuations had caused the damage, he reported to city officials that the combination of clay and quicksand underlying part of the town will not support heavy weights well on footings as small as those usually constructed.

LET'S GO TO WORK NOW—Wasting no time after last week's announcement of the appointment (ENR Oct. 18, p. 25), President Eisenhower Monday administered the oath of office to John A. Volpe—new Highway Administrator—and commented "Let's go to work now." Volpe, recently resigned Massachusetts Public Works Commissioner, will start things rolling pending the arrival of the permanent administrator—New York's Bertram D. Tallamy—in January.

PAN AMERICAN ENGINEERS—Engineering education is an international problem, and formal sessions should be devoted to it at future conventions of UPADI (Union Panamericana de Asociaciones de Ingenieros). This was the conclusion, expressed in the form of a resolution adopted by the 200 engineers from 16 North and Latin American countries who attended UPADI's 4th convention in Mexico City Oct. 8-12. The next convention will be in Montreal.

As the world's tallest and most forbidding mountain peaks have at last succumbed to the determination and initiative of man, so, many of the problems encountered in pipeline installations have been overcome by the versatility of Lock Joint Concrete Pressure Pipe.

Whether it must be installed in swampland, on steep grades, in a maze of underground city utilities or in the limited confines of a plant, Lock Joint Concrete Pressure Pipe can be laid bottle-tight, rapidly and with ease; and the trench can be backfilled immediately to avoid expensive ditch maintenance.

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WASHINGTON OBSERVER

Treasury funds are being used to maintain the secondary market for mortgages. For the first time, the Administration is permitting money borrowed by the Treasury to be tapped by Federal National Mortgage Association for the purchase of VA and FHA mortgages. Up to now Fannie Mae has been financing its purchases by floating debentures in the money markets.

The main purpose is to use government money for housing at a time when both the shortage of credit and the decline in homebuilding has become a political issue of importance.

•

Fannie Mae is being allowed to use its $1-billion line of credit at the Treasury to finance purchase of eligible mortgages which are being offered to the agency at the rate of $125-to $150-million per month. To borrow the money to buy this quantity of paper would cost Fannie Mae about 4%—whereas FNMA is getting it from the Treasury at 3%.

The $100-million issue of debentures floated nine months ago by Fannie Mae will be refinanced within three weeks in the private market. Agency officials see no lack of buyers, but the cost of borrowing probably will be much higher than for the original issue last February.

•

Network of water pipelines across the country is foreseen by Interior Secretary Fred Seaton—something similar to the way oil and gas pipelines now criss-cross the country. They'll be needed, Seaton predicts to carry water from source of supply—including de-salting plants—to areas where it's needed. Seaton says that "within the last year 1,000 of our cities, towns and villages" have been forced to curtail in some cases to a drastic degree, the use of water.

Seaton said some $94 billion will be spent in power expansion over the next 20 years, $40 billion in the next 10 years—an estimate that jibes with earlier forecasts from the Federal Power Commission. Seaton plugged the Administration's partnership policy as the only way this amount of plant can be built—that funds must be drawn from private sources, and from local and federal agencies to meet the vast demand.

•

Construction under the new highway program won't soak up the funds available even in the second year of the program.

Federal grants will run about 60% of the allocations to states for the year beginning next July 1, according to estimates being presented to the Budget Bureau by Commerce officials.

Payments to the states will run about $1.5 billion whereas the allocation for the same year to all federal-aid programs comes to $2.55 billion. Of the $1.7 billion allocated to the interstate network, it's estimated that about $750 million actually will be paid out. On other federal-aid highways, another $750 million in grants will be spent.

Program is figured to reach $3 billion in federal payments per year in 1961-62.

•

A new report on how cities are meeting their parking problems has been published by the Bureau of Public Roads. It's a detailed 172-page study covering financing, land acquisition, design and the like. Cost: 55 cents, from the Superintendent of Documents, Washington 25, D. C.

Reimbursement of utilities for relocation of facilities along highways has been studied by the Highway Users Conference. A report summarizing state and federal laws and practices is available by writing 966 National Press Bldg., Washington 4, D. C.

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ASCE Votes Two Studies of Profession

Also, technical papers offered at its annual convention in Pittsburgh describe contemporary construction jobs

The board of directors of the American Society of Civil Engineers voted last week to implement two pilot studies of the engineering profession.

At the society's annual convention in Pittsburgh, the board approved an expenditure of $25,000 for the two studies. A sum of $15,000 will be spent on a review of the civil engineering profession. The work will be done under direction of a committee headed by Adolph J. Ackerman of Madison, Wisc., and will be aimed at discovering the faults and deficiencies of the practice of civil engineering and its educational procedures. It is expected that the program will disclose areas where more intense study can be undertaken.

The second study will be conducted by Engineers Joint Council and Engineers Council for Professional Development. It will involve the entire engineering profession. ASCE is contributing $10,000 as its share of a $50,000 total. Here again, the studies are expected to lead to much more detailed future investigations that are expected to do much to show how the engineering profession can be improved for better service.

More than 150 technical papers were presented at the annual convention. In addition, numerous committee meetings and business sessions were held, and field trips sponsored by the society's Technical Division permitted the members to inspect several outstanding construction projects.

The society also inaugurated the new Pipeline Division at the convention.

• **Engineering salaries**—In an inaugural address, the new president, Mason G. Lockwood, expressed concern over "increasingly irresponsible bidding practices for the services of young engineers." Lockwood also reported on the results of a questionnaire on society affairs that he had sent to officers of the society's 74 local sections (see page 69).

The retiring president, Enoch R. Needles, consulting engineer, Howard, Needles, Tammen & Bergendoff, New York City, also commented on the effect of the competition for young engineers. "Our young graduates, with their high starting salaries," he said, "are doing all of us a great favor." He believes the higher salaries will be extended to the older engineers soon.

• **New role for engineers**—Maj. Gen. Emerson C. Itschner, Chief of Engineers, called attention to the increasing responsibilities of engineers, because: "Tomorrow's demand will be greater—greater not only in quantity and size, but in breadth and significance; not only in their demand upon our skill, but in their demands on our citizenship in our communities. . . .

"We are being forced to realize that some of our most serious problems are not technical ones, and that to play our due part in finding solutions to them we must be something more than engineers—or rather, that engineering itself must be recognized as something more than a matter of plans, specifications and field work. The engineering profession must be, more than it has been, a full participating member in all aspects of modern society."

Nuclear Power Plant Project

The technical papers presented at the ASCE meeting highlighted construction activity in the Pittsburgh area. Included was a thorough discussion of the civil engineering phases of the first full-scale nuclear power plant in the U. S., as well as a field trip to the project at Shippingport, Pa.

Westinghouse Electric Corp. under contract with the Atomic Energy Commission, is building the pressurized water reactor. Duquesne Light Co. is supplying the site and is building the turbine-generator section. The utility firm also will operate the plant.

According to R. B. Donworth, vice president of Duquesne Light Co., the plant contains many departures from the conventional—unusual heat cycle, watertight circuits to prevent leakage of contaminated water, special auxiliary electrical system, radiochemistry laboratories, "clean" room for core assembly, health and physics facilities, underwater handling and storage of fuel, $1.5-million waste-disposal plant and 5-ft-thick concrete shields against radiation.

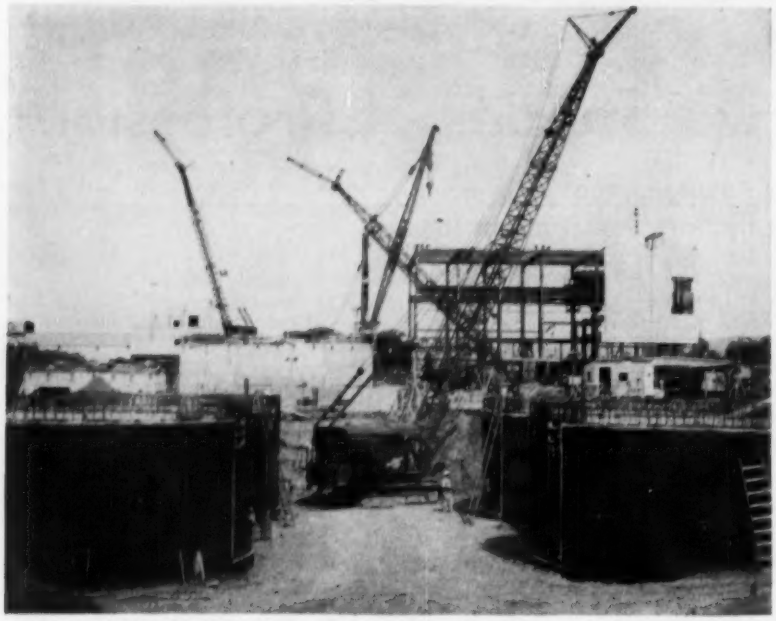
H. T. Evans, structural engineer, Stone & Webster Engineering Corp. Boston, Mass., said that the most important major requirement of the design from the structural engineer's point of view is the necessity for enclosing the nuclear reactor portion of the plant in a tight container of large volume to guard against the remote possibility that radioactive vapors or fission products might be released as a result of the rupture of a pipe or some such "incident." The containers are welded steel shells designed for a vapor pressure of 50 psi.

Four containers are used—one for the reactor (the nuclear core is 6 ft in diameter and 6 ft high), two for the boilers and one for auxiliaries. The steel shell "boiler rooms" are each 50 ft in diameter and about 100 ft long, while the auxiliary container is even longer. They will be completely enclosed in a box of normal density concrete with a roof partly of precast units. Studies indicated that high-density concrete would not be economical for these shields.

"The reactor plant buildings," Evans said, "are of conventional construction designed with the object of keeping the cost as low as possible." However, foundations for adjacent buildings had to be placed on compacted backfill of considerable depth. This fill "was placed in 6-in. layers, thoroughly rolled and tamped, and brought to a density equal to that of the densest undisturbed ground beneath, as shown by tests." The foundations then were designed as if they rested on undisturbed soil.

William A. Conwell, structural engineer, Duquesne Light Co., outlined the foundation and structural features of the turbine-generator portion of the Shippingport plant. The turbine-room foundation, he said, is a concrete slab 10 ft thick, topped by 2 ft of concrete in which pipe trenches and drains are located. It is designed against uplift water pressure from floods. The slab rests on compacted sand and gravel fill.

In the turbine area where the main steam and other lines emerge from the nuclear part of the plant, radiation shielding is provided. It consists usually of 3-ft-thick concrete sup-



NUCLEAR POWER PLANT takes shape at Shippingport, Pa., with construction of steel frame and turbine generator foundations (background) and waste-disposal tanks (foreground).

ported on the steel framing of the building.

Robert J. McAllister, senior project engineer, Duquesne Light Co., said that the use of fly-ash in the 3,000-psi concrete saved about $0.67 per cu yd—a reduction of 4% to 4½% in the cost of concrete delivered to the site.

William C. Siler, structural engineer, Atomic Power Development Associates, Inc., Detroit, and Leonard P. Zick, chief research engineer, Chicago Bridge & Iron Co., Chicago, presented design considerations for atomic-power-reactor containment structures. The ASME boiler and pressure vessel code is the best available for design, construction and inspection, they said. But to apply the code, judgment is required in selection of temperatures and positive and negative internal pressures, to obtain a practical design. Design pressures and temperatures may never be reached except during pneumatic testing of the vessel.

Conrad P. Straub, chief, Radiological Health, Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio, reported recent developments in treatment of atomic wastes. These included treatment plans for low-level wastes prior to discharge in a river, concentration of low-level wastes by evaporation and dumping at sea incorporated in concrete, ground and ocean disposal of intermediate and high-level wastes, storage of high-level wastes, and fixation in clay and firing, enabling absorption of bulk wastes in one operation and forming unleachable products.

• Other Outstanding Projects

Corps of Engineers experts called attention at the convention to the urgency of a program to assure modern navigation facilities for the Ohio River and certain of its tributaries within 15 years. Major criteria for the program, they said, should include fewer locks and dams, to reduce travel time and tow operating costs, deeper pools impounded by higher dams, to reduce resistance to propulsion, fewer structures, to decrease the number of elements that must be maintained and operated, design modifications to reduce manpower required at each lock and dam. Application of these criteria leads to a major departure from the initial concept of movable dams with elements that can be lowered to the river bottom when stages are equal to or greater than the designed minimum channel depth, according to James W. Bruce, chief, and Dwight W. Keller, civil engineer, Planning and Reports Branch, Ohio River Division, Cincinnati, and James A. Neill, chief, Engineering Division, Pittsburgh District.

Other Corps of Engineers experts reported that first costs of local protection works of the Ohio River Basin flood-control plan total about $140 million, whereas to date they have already prevented about $110 million in flood damage. Performance of completed reservoirs also has been impressive, they said. Flood-control benefits are about double the initial cost of the upper river reservoirs. In addition, the reservoirs serve the additional valuable function of low-flow regulation.

The report was given by Bruce R. Gilcrest, chief, Hydraulics Branch, Ohio River Division Emil P. Schuleen, assistant chief, Engineering Division, Pittsburgh District, and Edward W. Landenberger, Planning and Reports Branch, Ohio River Division.

• **City rehabilitation**—The convention also turned the spotlight on Pittsburgh's famed efforts at urban renewal. Patrick J. Cusick, Jr., assistant director, Pittsburgh Regional Planning Association, said that the city's projects have inspired other communities to follow suit. Of the 129 municipalities in Allegheny County, 19 have master plans substantially completed and at least another 13 are well advanced in their planning. Federal-aid funds, provided by the Housing Act of 1954, should accelerate these efforts he believes. (Outstanding projects in Pittsburgh include the reconstruction in the Mellon Square area and at the Point, formed by the confluence of the Allegheny and Monongahela Rivers).

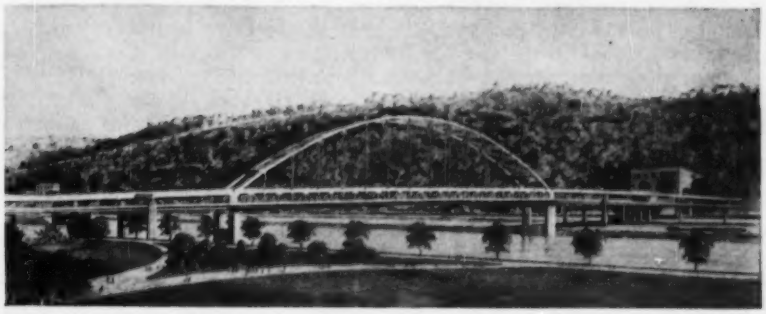
The current program, said William R. B. Froehlich, executive director, Public Parking Authority of Pittsburgh, began in 1943, with the formation of the Allegheny Conference on Community Development, a civic agency of business leaders and key public officials. County and state cooperated. State bills were passed dealing with smoke control, housing, subdivision control, refuse, recreation, mass transportation, off-street parking and highways.

"In 1946," Froehlich pointed out, "there were 298 hours of heavy smoke compared with 10 hours in 1955. And in the past 10 years, there has been a reduction of 89% in total smoke."

Congestion in city streets is being relieved by provision of off-street parking. Since 1946, the Public Parking Authority has provided over 3,900 parking spaces in five downtown garages. Also, said Froehlich, the mayor's emergency committee on traffic flow during construction has been effective in various phases of the Penn-Lincoln Parkway project.

• **Novel bridges**—The parkway, now under construction, will carry the William Penn Highway (U. S. Route 22) and the Lincoln Highway (U. S. Route 30) from a point about 10 mi east of Pittsburgh to a point about 10 mi west. Because of the numerous structures required to cross the hilly terrain, the 20-mi length

Gets preview of unusual bridge designs



DOUBLE-DECK BRIDGE over the Monongahela River at Pittsburgh will be the first arch with a truss as the thrust-carrying tie.

will cost about $150 million to build. Some of the structures were described at the meeting by Charles R. Way of Richardson, Gordon and Associates, Pittsburgh.

The most unusual structure on the Penn-Lincoln Parkway said Way, is the Fort Pitt Bridge, to be built over the Monongahela at the Point. A 750-ft tied arch, it will carry four lanes of traffic in each direction on two different levels. It will be the first double-deck tied arch, as well as the first arch to utilize a truss as a tie, Way believes. With 14 hanger stresses as the unknowns, stress analysis was performed with an electronic computer, which solved 14 sets of 15 simultaneous equations. Card programming for this phase required about one week for one man, but the mechanical solution was obtained in two hours.

Another unusual structure is the Gateway Portal, which will funnel traffic to the Point bridges. Almost as wide as it is long, this bridge is of single-span reinforced concrete arch construction. Its span is 170 ft and the rise, 22 ft. Its two roadways, which have a minimum width of 70 ft and which are separated by a 12-ft median, are carried on three arch ribs that are semi-circular in cross section and two quarter-circle ribs. Cusps formed by the joining of the edges of the ribs are 41 ft apart.

• **Federal highway program**—Going beyond the Pittsburgh area in its consideration of highway problems, the ASCE annual meeting heard Rex. M. Whitton, president of the American Association of State Highway Officials, extoll the federal-aid highway bill as one that "undoubtedly will go down in our history books as the most forward-looking and far-reaching legislation ever enacted to date in this nation."

The interstate system, when completed, Whitton said, "will carry at least 25% of our total traffic. Controlled access and dual-lane construction, two of the greatest engineering factors in highway safety, will be given critical attention. The highway user will be able to cross the country without being stopped by a red light or stop sign, he predicted.

Also considering the interstate system of utmost importance, Joseph Barnett, deputy commissioner, Bureau of Public Roads, said, "The reasonable certainty of financing the improvement of the system to completion presents an opportunity for states, counties and cities to do some realistic long-range planning and indulge in those actions that highway engineers have advocated for so long—adequate traffic studies, preliminary planning and design, tying down the line and highway type, and above all, advance acquisition of right-of-way. . . . With a fixed plan for and certainty of freeway improvements, private enterprise will be given the courage to develop adjacent land areas properly."

H. George Yeager, general maintenance superintendent, Pennsylvania Turnpike Commission, Harrisburg, warned against inadequate maintenance of the costly interstate system. He pointed also to the necessity of practicing preventive maintenance. And he advised maintenance personnel to avoid interfering with the passage of motor vehicles.

• **Artic construction**—The ASCE convention also heard a report on progress in the solution of transport and construction problems in the Arctic.

Robert R. Philippe, chief, Special Engineering Section, Corps of Engineers, Washington, D. C., said that significant accomplishments in airbase installations in the Far North have been made at great cost. These were justified by national defense. Now we must learn to make maximum use of indigenous materials—snow, ice and frozen ground, he advised.

Kenneth A. Linell, chief of the Arctic Construction and Frost Effects, Laboratory, New England Division, Corps of Engineers, Boston, reported that the weight and speed of large new planes have multiplied construction problems of permafrost airfields. Experience with jet aircraft, in particular, he said, indicates that pavement waviness that heretofore has been considered minor may be objectionable, and as a result, the Corps of Engineers has tightened its requirements for pavement construction.

• **Rivet tests yield new data**—Jonathan Jones, Bethlehem, Pa., told the convention that the Research Council on Riveted and Bolted Joints was ready to issue a recommendation on allowable stresses, as a result of research conducted at the University of Illinois. For riveted connections made of steel meeting ASTM Specification A7, with rivets spacing not exceeding five diameters, and subjected principally to static loading, the ratio of allowable bearing stress to tensile stress may be increased from the present 1.50 to 2.25. At the same time, the bearing-shear ratio may be increased to 3. The council is now issu-

Founder Societies' Medal to Adm. Ben Moreell

The John Fritz Medal, for notable scientific or industrial achievement, was awarded at the ASCE annual convention to Adm. Ben Moreell, chairman of the board, Jones & Laughlin Steel Corp., Pittsburgh.

The recipient was chosen by a board appointed by the four Founder Societies—American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers and American Institute of Electrical Engineers.

A civil engineering graduate of Washington University, St. Louis, Moreell entered the U. S. Navy Civil Engineer Corps in 1917. In 1937, he was appointed Chief of the Bureau of Yards and Docks and chief of Civil Engineers with the rank of rear admiral—a fitting acknowledgment of his ability to administer large and unusual construction projects as well as of his intimate knowledge of structural design. He wrote a design manual on reinforced concrete that is still used as a guide on Navy construction.

In 1944, Moreell was advanced to vice admiral, at 51, the youngest to hold the rank. In 1946, appointed a full admiral, he became the first staff officer ever to attain four-star rank (ENR July 18, 1946, p. 77).

On his retirement from the Navy shortly after, he was elected president of the Turner Construction Co. The following year he joined J&L as president and chairman of the board. Still interested in civil engineering, Moreell recently headed the Second Hoover Task Force on Water Resources and Power.

ing a recommendation for members subject to fatigue.

"What the recommendation amounts to," said Jones, "is that the bearing allowance of 7,000 psi now in our bridge specifications might just as well be 40,500, with no loss in joint strength in tension, compression or shear." Furthermore, for single-shear joints, there is no practical reason to make calculations for bearing, and for double-shear, bearing stresses will not be significant except in the case where very thin material is used.

• **Building costs**—H. C. Turner, president, Turner Construction Co., New York City, presented construction costs for large office building—steel frame, $3 to $8 per sq ft of floor area; brick walls, $4 to $5 per sq ft of wall area; limestone walls, $6 to $7 per sq ft; aluminum walls, including masonry backup and insulation, $7 to $8 per sq ft; stainless steel walls, $7 to $8 per sq ft with mill finish and about $10 polished; glass walls, $10 to $11 per sq ft; 4x6 ft double-hung carbon-steel window, $3 per sq ft of opening; 4x6-ft double-hung aluminum window, $4 per sq ft; 4x6-ft pivoted stainless steel window, $6 per sq ft, and in aluminum $4; fixed window in stainless steel $4 per sq ft and in aluminum, two-thirds as much; electrical work, $2 to $3 per sq ft of floor area.

• **The society's new officers**—Mason G. Lockwood, consulting engineer, Lockwood, Andrews Newnan, Houston, Texas, was installed as president.

Francis S. Friel, consulting engineer, Albright and Friel, Philadelphia, Pa., and Norman R. Moore, Chief of the Engineering Division, Mississippi River Commission, Vicksburg, Miss., were inducted as vice presidents.

Six new directors were installed: Clinton D. Hanover, Jr., consulting engineer, Hardesty & Hanover, New York City; E. Leland Durkee, Engineer of Erection, Bethlehem Steel Co., Bethlehem, Pa.; Howard F. Peckworth, Managing Director, American Concrete Pipe Association, Chicago; Finley B. Laverty, Chief Hydraulic Engineer, Los Angeles County Flood Control District, Pasadena, Calif.; William J. Hedley, Assistant Chief Engineer, Wabash Railroad, St. Louis, Mo.; and Randle B. Alexander, bridge engineer for the Texas State Highway Department, Austin, Texas.

Honorary membership was conferred on Prof. Albert Haertlein, associate dean of engineering and applied physics, Harvard University, Cambridge, Mass.; Maj. Gen. Thomas M. Robins, consulting engineer, Portland, Ore.; Ole Singstad, consulting engineer, Singstad & Baillie, New York City; and Prof. Emeritus Ralph B. Wiley, Purdue University.

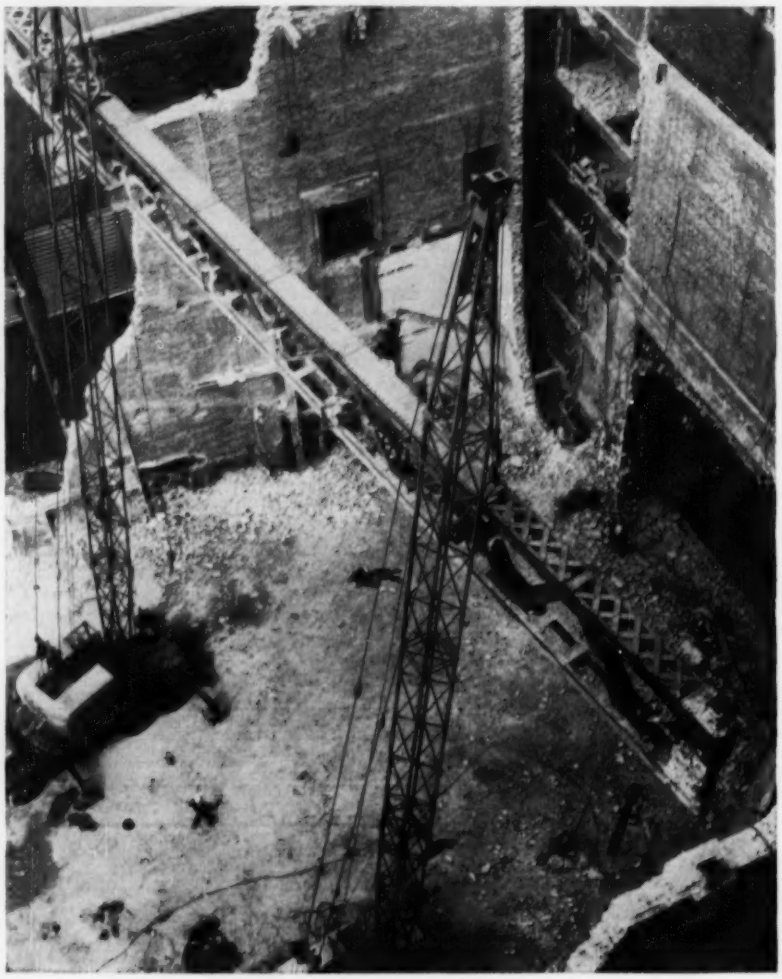
First Unit Goes On the Line At Corps' Gavins Point Dam

Power from the first 33,000-kw generator at Gavins Point Dam, Yankton, S. D., was placed on the line late last month, supplying customers in South Dakota and Nebraska. Gavins Point Dam is the fourth multi-purpose mainstem dam built by the Corps of Engineers along the Missouri River.

Two other units of Gavins Point's power installation will start operation soon.

The second unit will go into operation next month and the third in January to bring the dam's generating capacity to 100,000 kw.

The addition of the Gavins Point unit brought the installed capacity of the Corps of Engineer Missouri River Dams to 678,000 kw.



Old Truss Is Removed, Put Back In

This 15-ton steel truss, erected in the Metropolitan Theater at Seattle in 1905, will support the roof of the Olympic Hotel's new Exhibition Hall in a $1-million remodeling program now under way. The hotel, built around three sides of the famous theater in 1928, now is being enlarged to include the area formerly occupied by the theater.

Architects Naramore, Bain, Brady & Johanson concluded the 80-ft-long truss could be used economically in the new structure, since it was in sound condition. Two 27-ton cranes with 90-ft booms were used to lower the truss to the ground. Then the 65-ft steel columns were shortened 9 ft and the truss put back in place, after cleaning and repainting.

Savings have not been as great as had been hoped, since the 9-ft-deep truss is heavier than ordinarily would have been specified and the rest of the structure had to be designed accordingly. They exceed $1,000.

Erection was handled by Isaacson Iron Works for Howard S. Wright & Co., general contractor.

Turnpike builders make their appraisal of . . .

The Grand Plan and Tollroads

After three days of conferences, panel discussions and technical sessions in Wichita, Kan., last week, turnpike builders were of the opinion that tollroads will continue to play important roles in our national highway transportation program.

Far from being completely out of the picture, as the construction tempo of so-called free highways in our national interstate highway program is increased, some additional turnpikes, bridges and tunnels may be financed by toll bond issues although admittedly in isolated cases.

This optimistic appraisal of the role of turnpikes in our national highway program was voiced at the 24th annual meeting of the American Bridge, Tunnel and Turnpike Association, Inc.

In keeping with the turnpike flavor of the three-day meeting, there were inspection tours of the 236-mi Kansas Turnpike which will be opened to traffic October 25.

In the opening session, Bertram D. Tallamy, Chairman of the New York State Thruway Authority, presented some provocative comments on the future of tollroad construction. His remarks held special interest in view of his recent appointment as Federal Highway Administrator (ENR Oct. 18,p. 25).

His appraisal of the over-all highway program was that there will be little demand for additional tollroads and that the multi-billion-dollar interstate highway program now getting under way will probably make tollroad financing obsolete.

At the same time, to those tollroads now in operation or still abuilding, Tallamy gave unstinted credit for spurring the federal government to undertake its own gigantic roadbuilding program.

The greatest accomplishment of our tollroad network, declared Tallamy, was to prove to the motoring public the unlimited assets that highway officials already knew were inherent in an integrated national system of interstate highways. The opening of various turnpikes and freeways brought home to great numbers of motorists the need for more adequate highways. And this need was confirmed and emphasized by their personal experiences on such roads, he said.

Other speakers on the three-day program pointed out that the excellent services offered by tollroad facilities, together with built-in safety and comfortable driving, will attract increasing volumes of traffic. Panel discussions dealt with a wide variety of problems of communications, maintenance, safety and other operational functions of toll bridges, highways and tunnels.

One four-man panel of turnpike authority engineers, J. C. Dingwall, Texas; W. D. Hoback, Oklahoma; Farwell Rhodes, Indiana; and Austin L. Wyman, Illinois, discussed the controversial problem of adequate turnpike connections in their respective states. Consensus of the group was that such connections with existing or future free highways should be implemented and expedited to keep abreast of demand.

Informal and corridor conversations, rather than formal discussions at the technical sessions, indicate that turnpike engineers recognize that the need for additional toll facilities currently is close to a standstill. But they also have a wait-and-see attitude. Give the current national roadbuilding program a chance to hit its stride, they say. But if, due to political or other considerations, the mileages of new federally-financed interstate roads are diluted too greatly over the entire system, public opinion may swing back to additional tollroad considerations. For, said one competent observer, the average motorist is chiefly interested in having an adequate highway to carry him wherever he wants to go. And he is not tolerant of stage-construction.

In the closing session, representatives of the 67 toll bridge, highway and tunnel authorities, commissions and corporations comprising the active membership roster of the association elected Weldon B. Heyburn, Chairman of the Delaware River Port Authority, president of the association. He succeeds Albert J. Wedeking, Executive Director of the Indiana Toll Road Commission. D. Louis Tonti, Executive Director, New Jersey Highway Authority, was elected vice-president.

Stack Razed by Burning Its Supports

Twenty minutes after workmen of the Del Balso Construction Co., of the Bronx, N. Y., had doused with kerosene and touched a match to its temporary wood supports last Thursday, a 125-ft brick chimney blocking construction work on the Cross Bronx Expressway in New York toppled to the ground. Earlier, the workmen had knocked out sections of the 28-in. thick walls at the 12x12-ft base of the stack and replaced them with 6x6 wood members.

Breaking in two places as it fell, the brick shaft disintegrated into rubble on striking the ground. Louis Goldbaum, job supervisor for Del Balso, said that the unusual method of razing was cheaper and safer than dynamiting.

TOPS FOR LOOKS among long-span bridges opened in 1955 is the Missouri River Bridge at Leavenworth, Kans., according to American Institute of Steel Construction.

Most Beautiful Bridges Cited

The Missouri River Bridge, Leavenworth, Kans., last week was cited as the most beautiful long-span bridge opened to traffic in 1955. The two main spans of the bridge are 420-ft tied arches.

In announcing the winners of its 28th annual competition in bridge esthetics, the American Institute of Steel Construction also named top selections in three other categories: Spans under 400 ft, cost above $500,000; fixed spans under 400 ft, cost below $500,000; and movable-span bridges.

Designer of the Missouri River Bridge was Howard, Needles, Tammen & Bergendoff, Kansas City, Mo. Winning bridges and designers in the other three classifications, in the order listed above, were: Ohio Turnpike Bridge over Cuyahoga River—J. E. Greiner Co., Baltimore; old State Route 8 bridge over Ohio Turnpike No. 1—Howard, Needles, Tammen & Bergendoff; Welfare Island Bridge over east channel of East River, New York City—Tippetts-Abbett-McCarthy-Stratton, New York City.

Singled out for honorable mention were a dozen more: Jefferson City-Missouri River Bridge—designed by Sverdrup & Parcel, St. Louis; Fort Henry Bridge over Ohio River at Wheeling—Howard, Needles, Tammen & Bergendoff; Barnhart Island Bridge over St. Lawrence River—Praeger-Kavanagh, New York; Cataraugus Creek Bridge, Springville, N. Y.—New York State Department of Public Works; Queens Blvd. Bridge of the Long Island Expressway, New York City—Ammann & Whitney, New York; Distribution Structure Overhead Addition, Oakland, Calif.—California Division of Highways; Colorado River Bridge, near Moab, Utah—Woodruff & Sapson, San Francisco; Snake River Bridge, near Alpine, Wyo.—U. S. Bureau of Reclamation; Archibald Ave. Bridge, Riverside County line, Calif.—California Division of Highways; Blue Bridge, Cumberland, Md.—Maryland State Roads Commission; Hoover Dam Bridge, Franklin County, Ohio—K. E. Dumbauld.

Double-Deck Freeway to Run In Front of Ferry Building

San Francisco has given up its fight to get an underground substitute for a double-decked freeway that will partially hide a famed landmark, the Ferry Building.

Underground construction of this segment of the freeway would add $17 million to the overall project costs, and because none of this extra money can be obtained from either the state or federal governments, Mayor George Christopher has withdrawn objections to the state's original plan—a straight-line, double-deck structure cutting in front of the Ferry Building.

By agreeing to the above-ground freeway, the city may lose out on a recreational area. The Ferry Building was to have been developed into a state park, but the State Park Commission says it will not release the $2 million needed for the project if a freeway is built in front of the building.

Bridge Designer Dies

Shortridge Hardesty, 72, created many famous spans

Shortridge Hardesty, 72, whose work as designer of many famous U. S. bridge structures made him a major figure in engineering circles, died Oct. 16 at Larchmont, N. Y.

Long a member and officer of the American Society of Civil Engineers, and holder of many of its awards, he was named an Honorary Member of the Society in 1954.

Hardesty, a native of Weston, Mo., received his civil engineering degree from Rensselaer Polytechnic Institute in 1908 and almost immediately began what was to be a long association with the late Dr. J. A. L. Waddell, already famous as the developer of lift-type bridges. In 1927 he became Dr. Waddell's partner in Waddell & Hardesty. After Waddell's death he continued the firm's practice until 1945, when he formed the new firm of Hardesty & Hanover.

Examples of Hardesty's bridge design work are the Goethals and Outerbridge spans, Staten Island, N. Y., the Hudson River lift bridges at Albany and Troy, the Rainbow Arch Bridge at Niagara Falls and the Mississippi River Bridge at Cairo, Ill. He also was the designer of the structural frames of the Trylon and Perisphere, used at the New York World's Fair of 1939-1940.

Philadelphia Will Give Up Its Public Parking Business

As a result of what city officials consider a highly disappointing fling at public ownership of parking garages, Philadelphia is about to become one of the first major U. S. cities to return its public parking facilities to private management.

Carl H. Krakover, chairman of the city's Parking Authority, has announced that bids are being sought for the management of Philadelphia's two big center-city garages. To be acceptable, any offer must be sufficient to guarantee an annual income in excess of bond payments on the facilities. It also must provide the city with a percentage of the overall receipts.

Two reasons are given by the authority for getting the city out of the public parking business: (1) Under public management, the net return is too low to justify city participation. It is felt that under private management the city will fare better; (2) When relieved of the task of running parking garages, the Parking Authority will be better able to concentrate on its principal job, that of acquiring additional parking sites.

Biggest Road Budget

$350 million is labeled for major California projects

An all-time record state highway budget providing more than $350 million for major construction purposes for the 1957-1958 fiscal year—more than $100 million in excess of the budget that was adopted a year ago—has been announced by the California Highway Commission.

Construction items in the new budget include $220.4 million for major projects, including construction engineering; $127.6 million for rights-of-way; and $6 million for contingencies, which normally is allocated later for construction purposes.

The over-all total budget adopted by the commission amounts to some $464 million, of which $421 million is for state highway purposes.

Highway allocations for other than construction include the following items: $25 million for maintenance, $25.5 million for preliminary engineering, $2 million for the statewide highway planning survey, $7.5 million for administration, and $4.5 million for buildings and plants.

Federal aid accounted for most of the additional funds in the budget, along with a normal rise in highway-user tax revenues collected by the state. For 1956-1958, California will receive approximately $134 million in federal aid for state highways, plus nearly $8 million in federal funds for county roads on the federal-aid secondary system. Prior to passage of the 1956 federal highway legislation, California's largest federal apportionment had totaled $47 million.

State Director of Public Works Frank B. Durkee points out that the 1957-1958 state highway budget is the first in history to contain one or more construction projects in every one of California's 58 counties.

State Highway Engineer G. T. McCoy informed the commission that some of the newly-budgeted projects would be advertised for bids within the next few weeks. State law permits the awarding of state highway contracts as early as Jan. 1, six months before the start of the fiscal year.

The longest single full freeway project in state highway history—29.4 mi on U. S. 66-91 from Victorville to Barstow—is included in the new budget. Together with a new 11.1-mi freeway project in and north of San Bernardino, this will provide 70 mi of continuous freeway and expressway from San Bernardino to Barstow.

The major gap in freeway and expressway construction on U. S. 101 between San Francisco and Los Angeles has been in southern Monterey County. The new budget provides for the construction of three projects totaling 14.8 mi, which will close much of this gap between King City and the completed freeway south of Salinas.

The long-range effort to multi-lane U. S. 40 over the Sierra Nevada Mountains is continued in the new budget, with one 5.7-mi freeway project in the high country west of Soda Springs and two projects for major detour construction preparatory to future freeway work on the same route.

Five New Hartford Bridges Slated As Toll Structures

The five new bridges scheduled for the Connecticut River near Hartford will be built as toll structures, according to an announcement by Gov. Abraham A. Ribicoff.

The governor said the decision was reached after consideration of time delays that would be encountered if a State Highway Department-federal aid setup were used.

The bridges will be built by the Greater Hartford Bridge Authority. Four of them across the river above and below Hartford are in the planning stage. The fifth is now being built between Hartford and East Hartford.

Gov. Ribicoff said that financing construction of the bridges by bond issues would allow swifter completion of the spans and help solve the acute traffic problems of Hartford and surrounding areas.

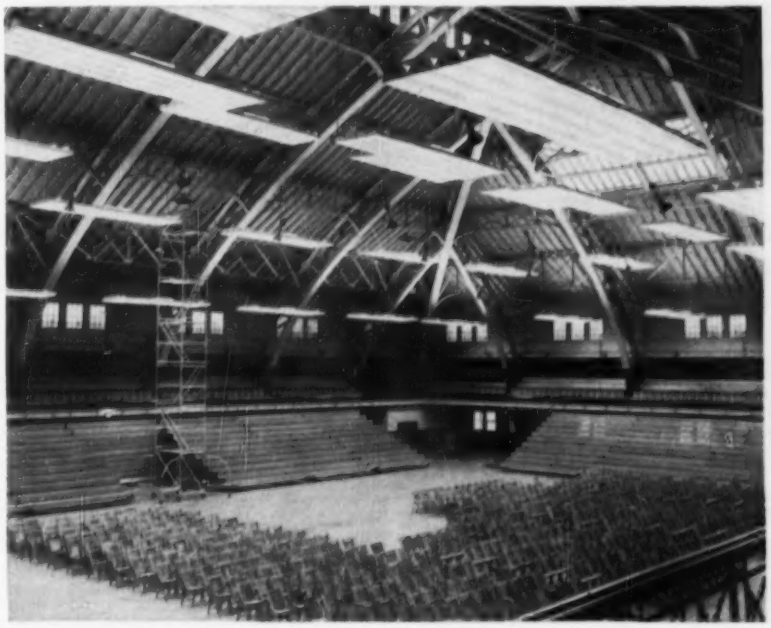
Seattle Approves Request For Hydro Project Permit

The Seattle City Council has approved a request by Paul J. Raver, Seattle City Light superintendent, to apply to the Federal Power Commission for a permit to construct a $100-million hydroelectric project on the Pend Oreille River.

The project—located near Ione, Wash.—will produce 360,000 kw on a continuous average basis and a maximum of 540,000 kw., according to J. M. Nelson, assistant superintendent of City Light.

The council already has appropriated $300,000 for surveys and other preliminary work.

The Skagit River, northeast of Seattle, is the city's principal source of hydropower. It has two dams and three power plants, and is being further developed by construction of another high structure, Gorge Dam.



Lighting Is High-Frequency, Low-Cost

The 400-cycle fluorescent lighting system in the newly modernized Convention Hall, Camden, N. J., reportedly costs 15% less to operate and maintain than the incandescent system it succeds. Yet it produces half-again as much light—70 ft-c at floor level. A motor-generator set supplies the high-frequency power. Lamps are 8-ft slimline tubes, mounted 16 to a fixture at heights up to 40 ft. William T. Harker & Associates, Camden, designed the system in collaboration with General Electric Co. specialists, and Gerald Electric Construction Co., Inc., Woodbury Heights, N. J., installed it.

Better Than Dams?

Northwest utility purchases insurance against dry year

Should low water at its hydro projects force Puget Sound Power & Light Co. to turn to steam power for any period, most of the added cost will be borne by an insurance company.

A policy has been written based on the flow of the Columbia, Baker, Snoqualmie and White Rivers, on which Puget Power has generating plants. After the composite flow of the rivers has dropped below a certain point Puget Power pays the first $100,000 of added steam costs, the insurance company the remainder, up to $800,000.

Only once in recorded history has the flow of these rivers fallen below a point where the difference in cost between hydroelectric and steam power would be greater than $900,000, at current prices.

The policy, placed through D. K. MacDonald & Co. of Seattle, became effective in late September and covers the period until May 1. The premium paid has not been announced.

Three other companies—Washington Water Power Co. of Spokane, Pacific Power & Light, and Portland General Electric of Portland, Ore.—are reported to have purchased a similar policy from Lloyds of London covering flow of the Columbia River and its tributaries. They reportedly hit upon the insurance plan as an alternative to the unpopular surcharge they adopted several years ago when they had to turn to steam power during a low-water year.

Wind Topples Freestanding Tower

Twisted wreckage is all that remains of a 158-ft tubular-steel hoist tower following its collapse in Edmonton, Alberta, as a result of 26-mph winds with gusts up to 45 mph. Base of the structure was 12x12 ft. It had a freight capacity of 3,000 lb.

Erected against the side of a 6-million federal office building now being constructed by Christensen and MacDonald, Edmonton, contractors, the tower was not guyed or attached to the building. Valued at $10,000 the tower will be replaced.

Engineers to Confer

International societies set dates for 1957 meetings

A number of international organizations whose proceedings relate to various aspects of construction have announced their meeting dates for 1957. These are arranged below in chronological order, together with a reference address for writing for more detailed information.

• 3rd International Congress on Irrigation and Drainage, San Francisco, April 29-May 4. Reference: Walter E. Blomgren, Chairman, U. S. National Committee of International Commission on Irrigation and Drainage, 260 Leetsdale Drive, Denver 22, Colo.; or The Secretary General, International Commission on Irrigation and Drainage, 1 Old Mill Road, New Delhi 1, India.

• International Association for Hydraulic Research, Lisbon, July 31-Aug. 5. Reference: M. C. Mendes da Rocha, Directeur des Laboratori'o de Engenharia Civil, Ministerio das Obras Publicas, Avenida Rovisco Pais, Lisbon, Portugal.

• International Society of Soil Mechanics and Foundation Engineering, London, Aug. 12-24. Reference: A. Banister, Esq., Secretary, British National Committee of the International Society of Soil Mechanics and Foundation Engineering, c/o Institution of Civil Engineers, Great George Street, London, S.W. 1, England.

• Seventh Pan American Highway Congress, Panama City, Panama, Aug. 19-30 (tentative). Reference: Travel Division, Pan American Union, Washington 6, D. C.

• International Union of Architects, 5th Congress, Aug. 25-Sept. 1, Moscow, U.S.S.R. Reference: Secretary General of the Union, 15 Quai Malaquais, Paris, France.

• Third International Conference on Engineering Education and Training, Sept. 29-Oct. 8, Paris. Reference: Dr. Thorndike Saville, Engineers' Council for Professional Development, College of Engineering, New York University, New York 53, N. Y.

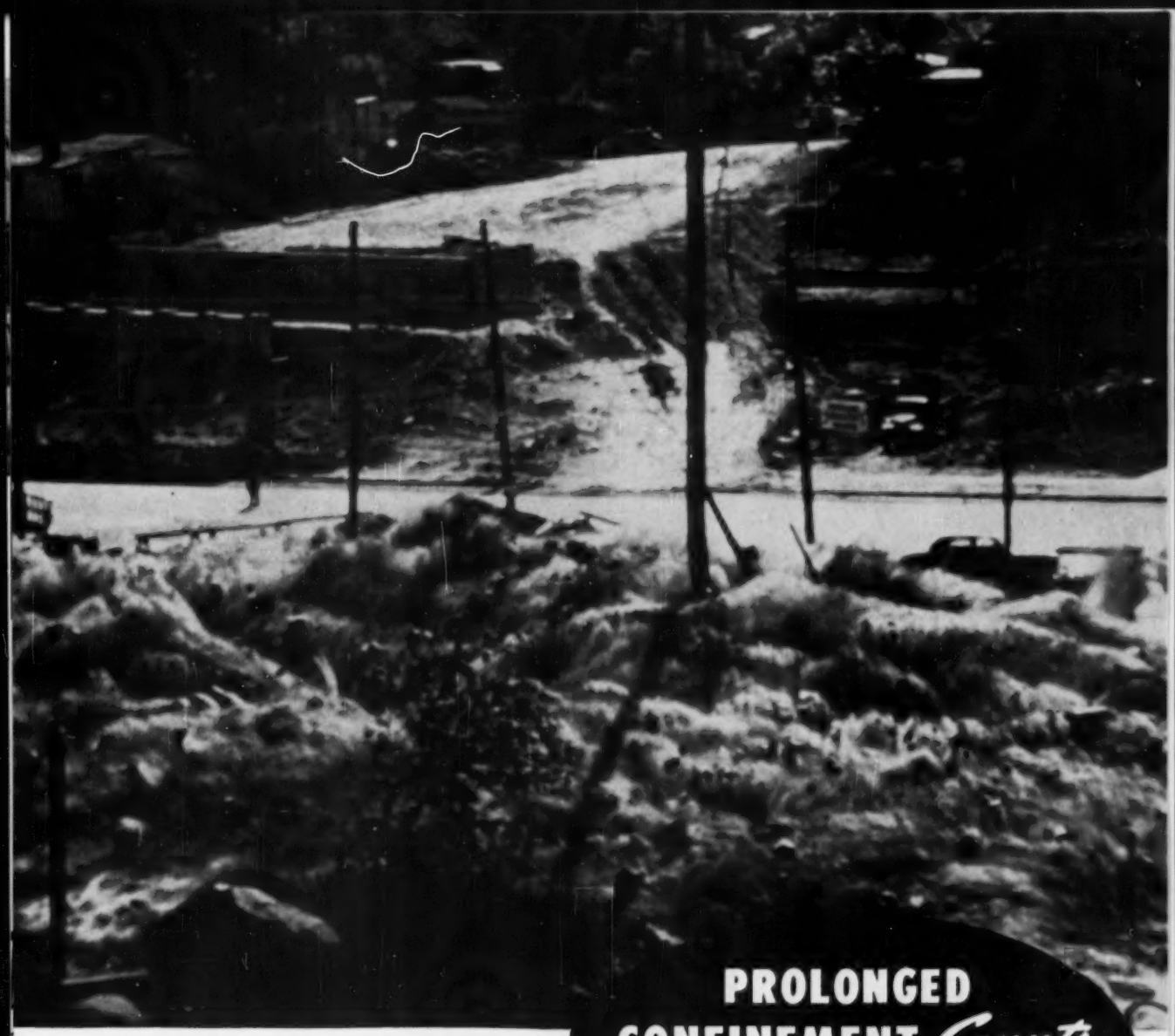
• International Society of Soil Science, Sept. 29-Oct. 8, Paris. Reference: c/o Royal Tropical Institute, 63 Mauritskade, Amsterdam, Netherlands.

Corps and College Set Up Engineer Training Program

Arrangements between the Sacramento District, Corps of Engineers, and College of the Pacific at Stockton, Calif., call for the Corps to provide on-the-job training for Pacific engineers.

The students will alternate between going to school for a year and working a year for the Corps until they graduate.

Col. A. E. McCollam, Sacramento District Engineer, points out: "The program permits a student to pay for his own education by working in the field he intends to enter instead of taking odd jobs or anything handy. This is one way of helping to overcome the engineer shortage and we feel that if it works in Stockton it can work elsewhere."



Blast initiated at bottom of holes using ROCKMASTER millisecond delays in an alternate pattern. Prolonged confinement keeps explosives force working on burden . . . breaking rock. Entire mass lifted only few feet.

PROLONGED CONFINEMENT *Counts*

when the public is watching and listening

When you're blasting along Central Avenue, the eyes and ears of all Yonkers are on you. Using the ROCKMASTER method with its *prolonged confinement* of explosives force, Yonkers Contracting Co. and Corbetta Construction Co. got good breakage and good public relations in all their blasting.

Prolonged confinement counts! The right combination of ROCKMASTER millisecond delay electric blasting caps and Atlas explosives makes possible—

- **good control**
- **greater efficiency**
- **improved breakage**
- **better public relations**

Before your next blast, why not go over your *specific* problems with your Atlas representative? He'll help you get the most out of the ROCKMASTER method and your explosives. And get "Better Blasting"—Atlas' informative newsletter on latest methods and materials. Write us to put your name on our mailing list today.

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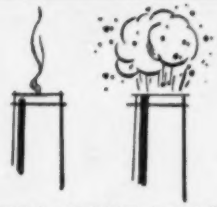
THE ACL SYSTEM

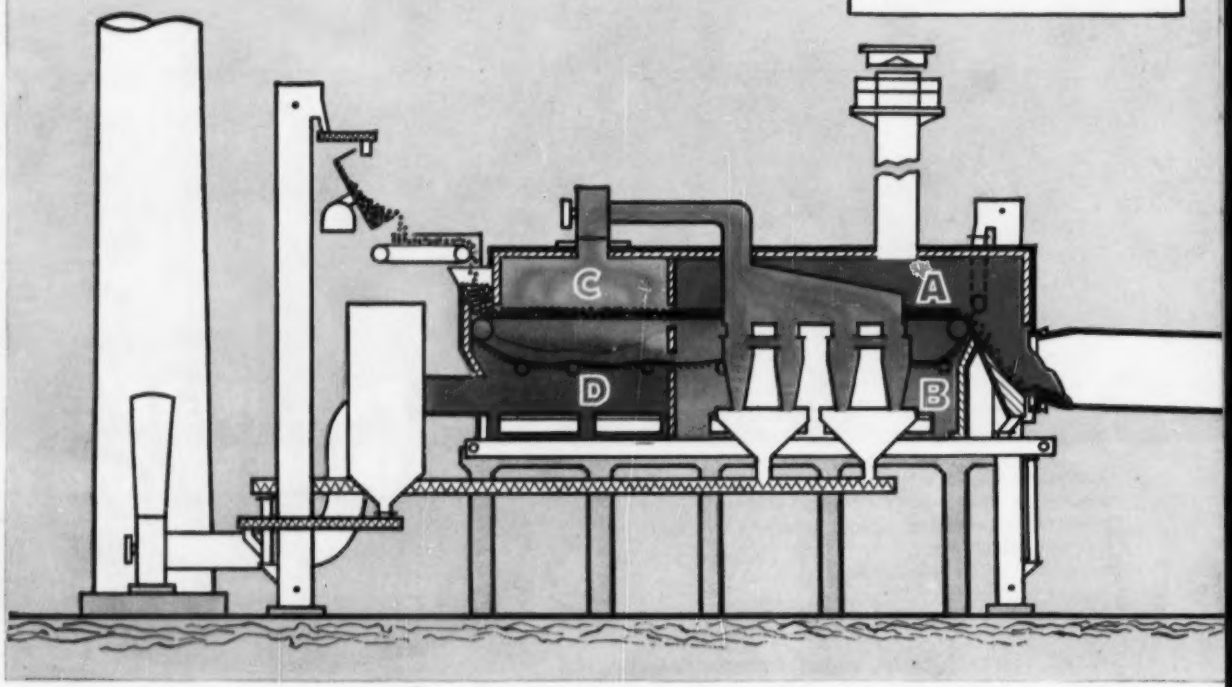
Cuts Cost

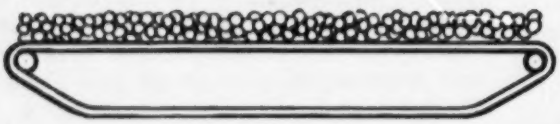
...puts you in a better competitive position—HERE'S WHY



LESS DUST LOSS

Double pass of gases through traveling bed of pellets reduces dust loss below 1% of feed weight without an additional dust-collecting system. Valuable processed material is saved. Dust load of exhaust gas is lower than in any other system.



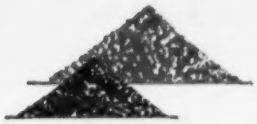


Traveling Grate Affords Many Advantages Because feed volume on traveling grate is constant, kiln operation is uniform and more efficient. There is no segregation of mix. Pelletizing locks in and maintains proportions of components. "Flushing" is eliminated, "ringing" minimized. Voids between pellets permit escape of moisture and gases without fluidization of bed. Because clinker maintains pelletized characteristics, it moves through the rotary kiln uniformly and burns easily.

EFFECTIVE DUST FILTRATION . . . efficient heat transfer . . . more uniform, better burning clinker . . . substantial savings in fuel, power requirements, space and manpower . . . maintenance economy—all these im-

ALLIS-

of Producing Cement

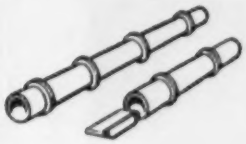


LESS FUEL

Fuel consumption for ACL systems now in operation averages 600,000 Btu per barrel of clinker. Conventional long, dry-process kilns range from 750,000 to 1,000,000 Btu. Powdered coal, fuel oil, natural or coke oven gas may be used.

LESS POWER

The ACL system for burning cement clinker requires about 2.3 kwhr per barrel of clinker for operation of kiln department. This is about one-third less power than required by rotary kilns using other preheating systems.



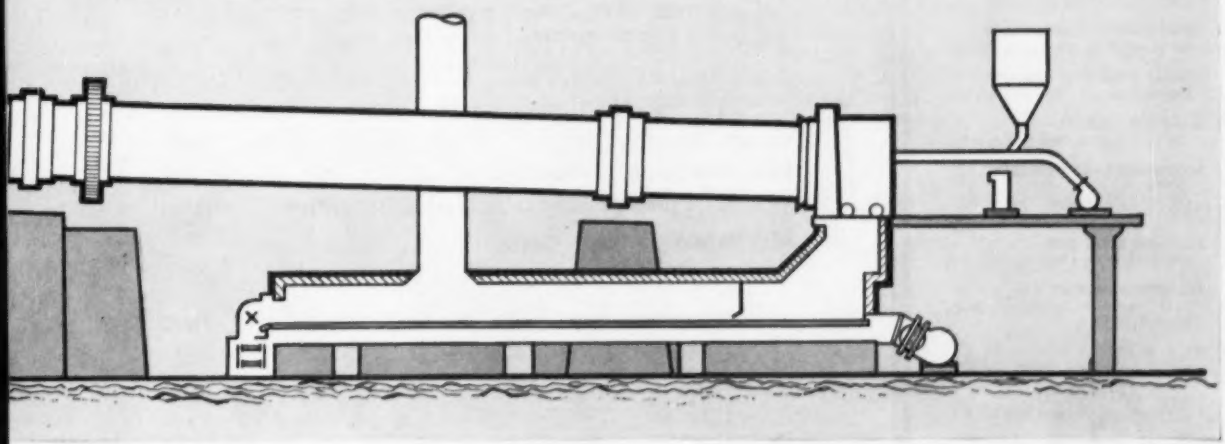
LESS SPACE

Entire ACL system—grate, kiln and cooler — is about 40% shorter than conventional long kiln installations. The totally enclosed traveling grate is about as high as the average kiln feed end housing.

How the Double-Pass System Works

Partial calcining and dust reclamation take place as hottest gases pass through the pellet bed on traveling grate. Gas temperatures are reduced from about 1800 to 500 degrees in this first pass (*A* to *B*). Next, gases pass through cyclones where larger dust particles are removed, and carried back to pelletizer. Final dust filtering takes place as gases pass through moist pellets on feed end of grate. In the second pass (*C* to *D*) gas temperatures are further reduced.

ACL is an Allis-Chalmers trademark.



portant advantages, and many more, are yours with the ACL system.

New Bulletin Available A new bulletin, describing the ACL system, Allis-Chalmers kilns and kiln auxiliaries, is ready for distribution. To get your copy, see your nearby Allis-Chalmers representative or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin. Ask for Bulletin 07B8431.

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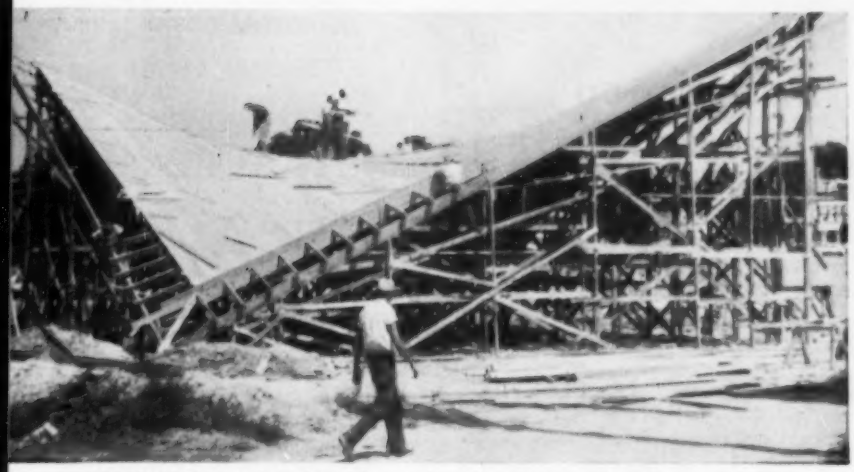

FORMWORK consists of straight members, but the concrete roof is . . .

A Saddle-Shaped Shell

The saddle-shaped concrete roof of a gasoline service station now being completed in Fayetteville, N. C., follows a geometric configuration not often used for building construction in this country. The shape is that of a section of a hyperbolic paraboloid.

Appearing at first glance to be a very difficult surface to form on the job, the shell has a characteristic—in common with all hyperbolic paraboloids—which somewhat simplified its construction: Lines running across the surface in certain directions are straight—in the vertical as well as horizontal planes (ENR Oct. 4, p. 65).

Croft & Hammond, architects, and Walter Preimats, consulting engineer—both of Asheboro, N. C.—designed the shell so that the formwork takes advantage of this geometric peculiarity.

Diamond-shaped in plan, the shell measures 70 ft on the long diagonal and 45 ft on the shorter. In profile along the short diagonal, the shell is convex upward, rising from a 3½-ft-high concrete buttress on each side to a center height of 13 ft above the floor. In longitudinal profile, it is concave upward, attaining a height of 22½ ft at the upswept corners.

The shell is 2¼ in. thick. It is bounded on all four edges by beams that taper from 12x24 in. at the buttresses to 12x9½ in. at the high ends.

Under balanced loading, the two-point support provided by the buttresses is satisfactory. But to avoid large torsional forces at the supporting corners under wind or unbalanced vertical loading, each edge beam is additionally supported by a 4-in. (inside diameter) pipe column located about 17 ft from the high end of the beam. Four 1-in. round tie rods connect the buttresses to resist lateral thrust. The building is designed for 20-psf live load, in accordance with the North Carolina building code.

The light weight of the shell allowed the contractor, D. R. Allen & Son, of Fayetteville, to use correspondingly light formwork—2x4 posts 2 ft and 4 ft c-c, 2x6 joists spanning about 4 ft, and ¾-in. tongue-and-groove plank. He laid the joists parallel (viewed in plan) to one opposite pair of edge beams, the plank parallel to the other. Since the intention at first was to place the concrete directly on the edge-matched planks, the contractor prepared a smooth tight surface. Later, it was decided to add ¼-in. thick pressed-wood sheathing to improve appearance and eliminate rubbing the underside.

The concrete was placed by crane and bucket. Slump was limited to 2 in., resulting in a mix stiff enough to be placed without upper forms.

The entire job, being built on a cost-plus basis for Ed Nichols, of Asheboro, is expected to run to about $15,000, including a 4-in. floor slab and an enclosed area of 310 sq ft for office, toilet rooms and storage. Excluding the cost of floor slab, enclosed construction and roofing (clear silicone waterproofing), the project has cost $2.00 per sq ft. Of this figure, formwork accounted for $1.21. If the decision to use a form liner had been made sooner, the builder could have cut form costs by laying an open-joint surface of low-grade planks as a base for the liner.

DOUBLE-CURVED concrete roof over a gasoline service station in Fayetteville, N. C., is a hyperbolic-paraboloidal shell, 2¼ in. thick. Tip-to-tip length of the shell is 70 ft, width 45 ft. Enclosed construction beneath is nonbearing.

Let these Westinghouse men help you cut public works electrical construction costs

Co-ordinating the almost endless details of public works electrical construction is a job for specialists.

Doing it by teamwork can simplify problems, cut costs. It is accomplished by employing specialized know-how on each phase of the specs.

Westinghouse, where ALL types of apparatus for such construction are available in an integrated line, also provides the specialists. Right in your area is a Westinghouse electrical construction engineer who can bring to your problems a team of men tops in their special fields . . . low-voltage distribution, switchgear, motor applications, motor controls, area or interior lighting, ventilation or air conditioning and a host of others.

No job is too small for technical collaboration from your Westinghouse field engineer and his team. No job is too big for them to demonstrate practical savings and technological advantages. Typical applications of Westinghouse apparatus in public works projects are shown below.

Your Westinghouse electrical construction engineer is as near as your telephone. Call him.

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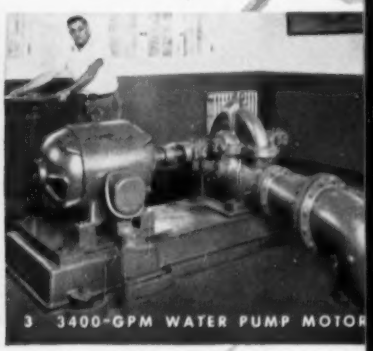
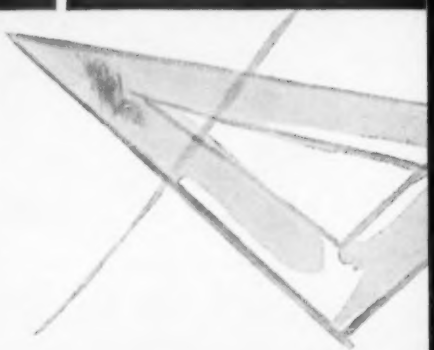
1 AIRPORT LIGHTING UNIT

2 SWITCHGEAR FOR WATER WORKS



3 3400-GPM WATER PUMP MOTOR



1. Type LD runway and taxiway lights at the St. Louis Airport, typical of the complete line of Westinghouse airport lighting units. 2. Block-built from unitized assemblies, this metal-clad, high-voltage switchgear vault receives incoming power from the Houston, Texas, Water Works System. 3. Westinghouse 200-hp, 1800-rpm, drip-proof motor driving a 3400-gpm pump at the Gloucester, Mass., pumping station. 4. Simplicity, safety, ease of maintenance are featured in this Westinghouse control center and switchgear distributing power for the San Jacinto, Calif., Water System. 5. 500-hp, Westinghouse compressor motor serving a modern power company building. 6. Co-ordinated Westinghouse motor control for the compressor motor shown in illustration 5.

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STREET LIGHTING
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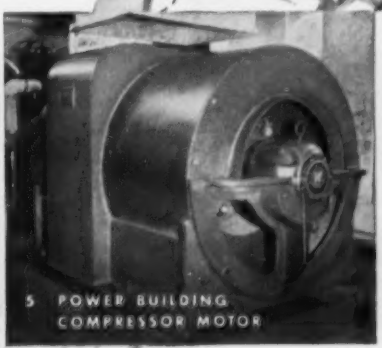
4 CONTROL CENTER FOR WATER SYSTEMS



5 POWER BUILDING COMPRESSOR MOTOR

6 MOTOR CONTROL UNIT

Tailored to a hillside site, office building for an insurance firm has . . .

Long-Span Floors at Low Premium

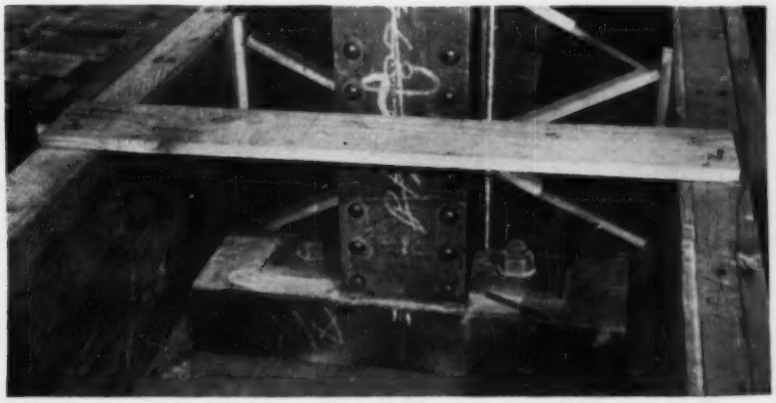
FLOOR FRAMING, supported on builtup steel columns, consists of concrete beams on a 30x40-ft grid—plus cantilevers—and pan-formed concrete deck.

Concrete floors spanning 40 ft from inner walls to outer columns and cantilevering 15 ft beyond, highlight the $3.4-million Fireman's Fund Insurance Co. building, in San Francisco. After studying many designs, engineers concluded it would cost little more to have the long-span floors (30 x 40 ft) than short ones (24 x 24 ft).

The huge 195,000-sq-ft building, now under construction, is roughly Z-shaped in plan. Its designers have taken advantage of a hilly site by calling for a three-story section on the low side of the hill and a one-story section on the high side. Connecting the two sections is a two-story transition wing. When completed, the structure will house 1,000 employees.

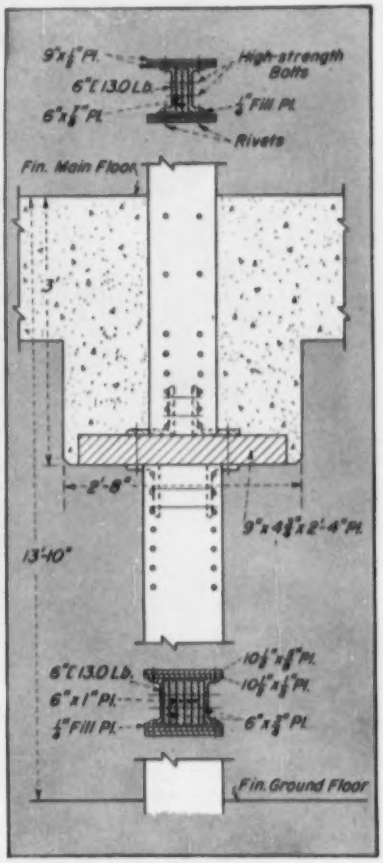
• **Multipurpose core**—The three-story section measures 150 x 300 ft and forms the north leg of the Z. A 34 x 150-ft core located in its center strengthens it against earthquakes. The core has 14-in.-thick concrete outer walls and 12-in. concrete cross walls. Three elevators, two stairways, toilets and a conference room will be located within it.

The center core also provides the inner support for the building's pan-formed slab and joist floor system. From the core, joists and girders extend 30 to 40 ft to a line of outer columns,



COLUMN SPLICE includes a bearing plate that also must support main concrete girders. Above, form for lower part of 32x36-in. girder is in place.

COLUMN BEARING can transmit up to 650 tons direct compression to belled-out caisson foundation. Leveling bolts raised base plate to provide 2-in. grout space beneath.



COLUMN ASSEMBLY is built up solid with steel plates and channels.

then cantilever 15 ft beyond. An overhang projects an additional 3 ft beyond the line of the curtain walls.

Column spacing is 30 x 40 ft. Spanning the 30-ft direction are 5½ x 19½-in.-deep pan-formed joists spaced 35½ in. c-c. These frame at right angles into 32 x 36-in. concrete girders, which span the 40-ft distance from core walls to columns and cantilever beyond. Slab thickness between joists is 4½ in.

• **Builtup steel columns**—Unusual steel columns are one of the building's key features. A typical column consists of two 6-in. channels separated by a solid filler of plates between the webs. Channels and plates are tied together by high-strength bolts. To increase the section modulus about the axis parallel to the webs, cover plates are riveted to channel flanges. These columns provide a solid steel core up to 6 x 17-in. (exclusive of cover plates) and are capable of taking up to 1,300 kips in direct stress plus bending stresses.

The 3-ft overhang along the building's perimeter posed a support problem, since joists and girders terminate at the curtain walls. The problem was solved by designing an 18 x 19½-in. reinforced concrete "torsion" beam to

MAZE OF REINFORCEMENT and utilities lines almost hides metal-pan floor forms. Two pans form a joist span and a bridging rib between joists at midspan.

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transmit the overhang load to the ends of the girders.

• **Colored glass spandrels**—The building is enclosed with continuous windows, which take up 9 ft of the 14-ft story height, and spandrels. Windows and spandrels are placed in 6 x 12-ft high aluminum frames, fixing a 6-ft spacing for aluminum mullions.

Spandrels are ¼-in. rolled plate glass, unpolished, with a blue color fused on the back. Behind them, where air-conditioning units are located under the windows, is a backup of a 1¾-in. air space, ¼-in. asbestos-cement board, 2-in. glass-fiber insulation, 4-in. plenum, ¼-in. asbestos cement and 1½-in. perlite plaster. Elsewhere, backup consists of ¼-in. asbestos-cement board, 1-in. glass-fiber insulation and 1½-in. perlite plaster. The insulation is cemented to the asbestos-cement board.

Air-conditioning for the completed building will be by steam or chilled water circulated to fan rooms in penthouses. There will be two zones—an exterior and an interior zone. Using a double-duct system—one duct for hot air, one for cold—air will be blended in a central core and fed through four central diffusers to interior bays and through under-window units to exterior bays. Ducts for air conditioning are located under the structural slab and run through the girders in some places. Where this happens, girders are reinforced with three 10-in. I-beams.

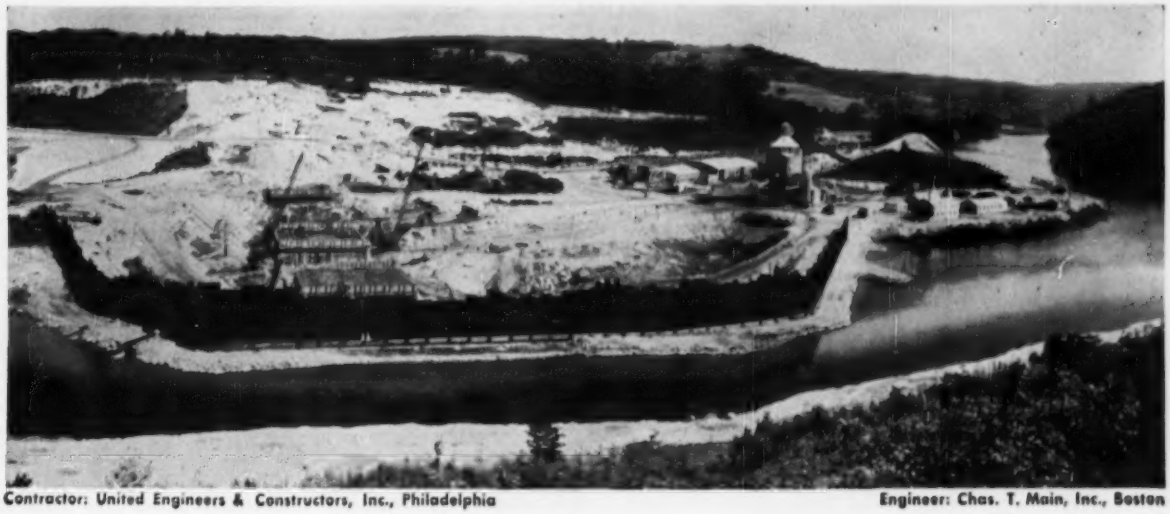
• **Diffused lighting**—In the main open work areas, a metal egg-crate system is suspended below the structural slab for diffused lighting. Above the egg-crate are 8-ft fluorescent tubes, 2 ft c-c. Continuity of the egg-crate system is broken at girders by acoustical panels. Curved plastic strips under the fluorescent tubes eliminate direct glare.

The building has been designed for 100 psf floor loading to permit files to be placed anywhere, and the same loading has been designed into the roof to permit a future additonal floor.

Foundation investigations revealed rock in about three-quarters of the site, decomposed soft shale elsewhere. For the shale areas, Dames & Moore, foundation consultants, predicted relative settlements of 1 in. if spread footings were used; so instead, belled-out caissons were adopted.

Other buildings being erected on the site include a parking garage for company cars, a boiler house and mechanical room.

Fred H. Merrill, vice president of the Fireman's Fund Insurance Co., is in charge of the project for the owner. General contractor is MacDonald, Young & Nelson, Inc., of San Francisco. Edward B. Page is architect, and John J. Gould is the structural engineer.

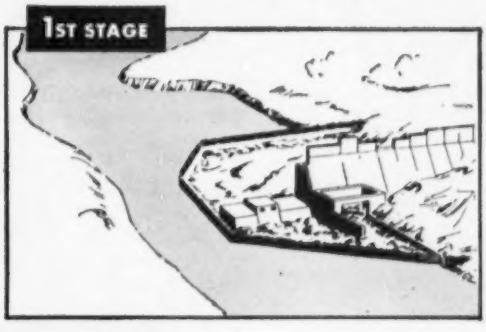


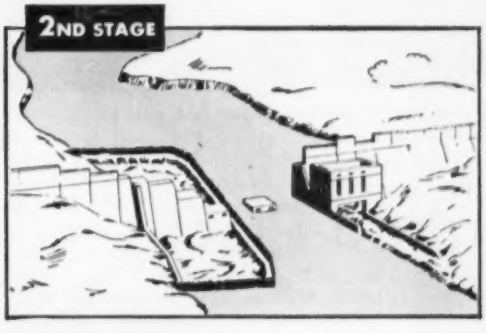
Contractor: United Engineers & Constructors, Inc., Philadelphia

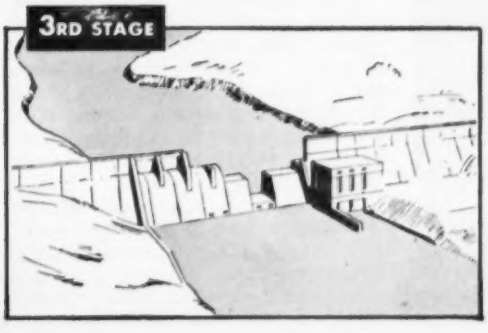
Engineer: Chas. T. Main, Inc., Boston

Diverting a River to Build a Dam with

McKIERNAN-TERRY PILE HAMMERS







To build the Connecticut Light & Power Co. dam across the Housatonic River near Sandy Hook, Conn., required a two-part diversion of the river. First, a 1,000-ft dike diverted the river away from one bank to permit building the foundations for the power house and the part of the dam on that side. Then, a similar dike was built at the other bank to permit building the dam foundations on that side of the river.

Each of the dikes was formed by about 800 sixteen-inch steel sheets, and the sheets were driven by a McKiernan-Terry 9B3 Double-Acting Pile Hammer. At a later stage of the project, a vehicular bridge was built over the 1900-acre reservoir back of the dam. A McKiernan-Terry Pile Hammer was also used to drive pier cofferdam steel sheet piling for this bridge.

In innumerable foundation projects, McKiernan-Terry equipment is selected by the contractor to assure dependable, speedy and economical pile driving. Write for bulletin.

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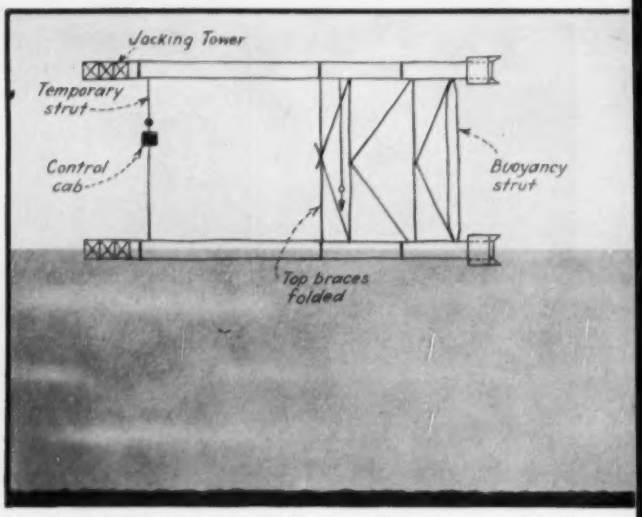
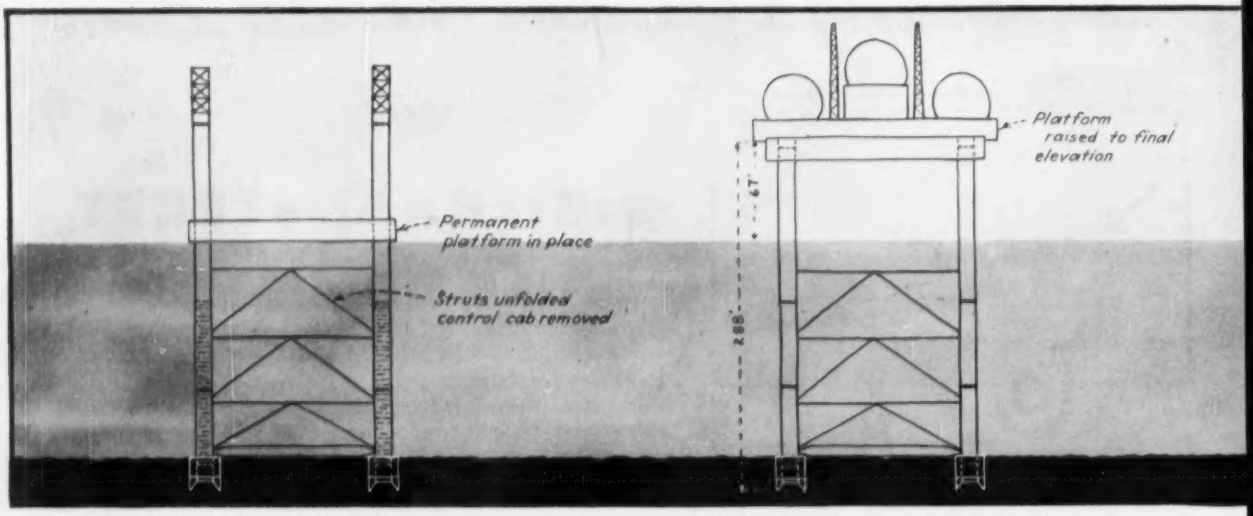
Plants at Harrison, N. J. and Dover, N. J.

Something very different from previous methods will be used to erect the Air Force's newest ocean radar platform, which will stand in more than 180 ft of open ocean water near New York



1. Towed out to sea, tower's legs will be huge tripod of hollow steel with bracing in place.



4. Landed on bottom, legs are driven into sand, cab removed and permanent platform floated in.

5. End of job will see platform jacked into final position and radomes installed.

Texas Tower Tilts Down Into Place

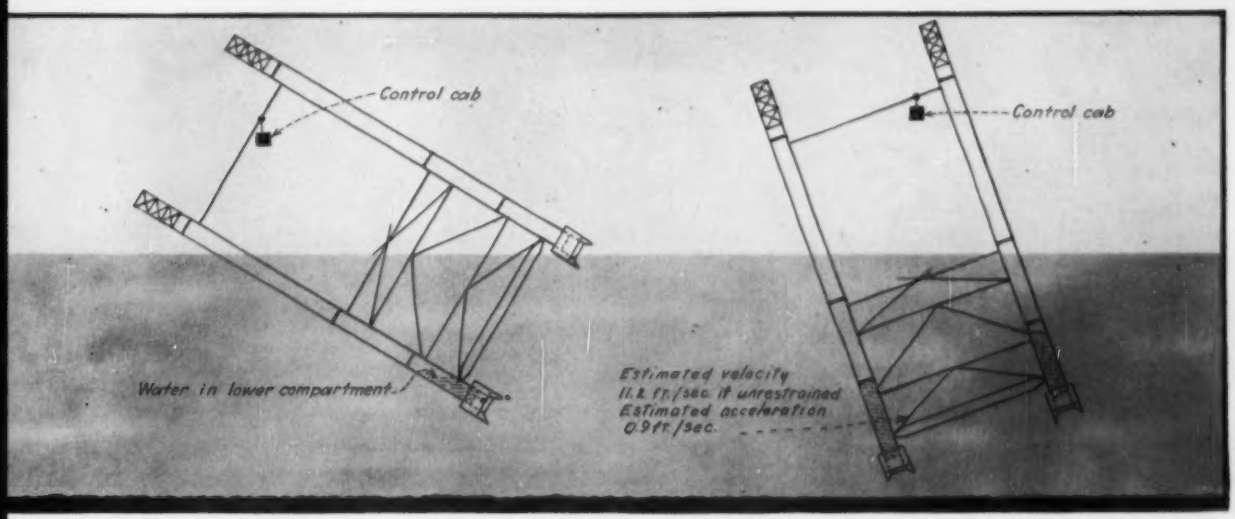
Two of the U. S. Air Force's projected five radar "islands" already stand above the cold North Atlantic waters off New England, to guard the mainland U. S. against surprise air attack. But while these spectacular structures and their erection methods are already familiar to most engineers and contractors, the third one—to put to sea for erection some time before the hurricane season next summer—will introduce some entirely new concepts, both of design and erection.

To be located in 180 ft of water—as compared to 56 and 82 ft for the two previous islands—this third one will require substantial underwater bracing to resist the much greater forces. But it is in erection procedure that departures from the previous islands will be most pronounced. In effect, the new tower will be erected by what might be called a tilt-up method—its enormous tripod legs being built separately, floated to the site and tilted into place. Its 200-ft triangle of platform will then be floated into the tripod, and jacked into position more than 60 ft clear of the water.

• **Dimensions**—This newest tower will be located on the medium-hard sand of the continental shelf, somewhere east of Sandy Hook, which guards the entrance to New York Harbor—and that fact controls its dimensions.

Mean water depth at the location selected is 180 ft. To clear such a depth, with adequate footing in the sand of the ocean bottom, and carry the platform the required 67 ft above the water, total length of the 12-ft 6-in.-dia. legs must be 288 ft, including a 21-ft section that will be sunk into the sand to anchor the tower.

The platform itself—without installed equipment—will weigh about 4,000 tons; the legs, without concrete filling, which will go into them for added stiffness, will weigh (with the bracing system) about 2,500 tons.



2. At site, lower compartments will be filled to begin tilting. Control cab swings freely.

3. Almost down, control cab remains level. Bottom buoyancy strut slows turning speed.

The platform section is now being fabricated at Portland, Me., under a subcontract by Continental Copper & Steel Industries, Inc.; the legs at Wilmington, Del. by Pusey & Jones, Inc.

• **Stresses**—What posed the problem for the engineers designing the new tower—and continues to pose a problem for the general contractor (a joint venture of J. Rich Steers, Inc., and Morrison-Knudsen, Inc.)—is how to build the components themselves, how to place the unwieldy structure, once at the site, and principally—how to provide the bracing necessary to withstand stresses imposed by the location.

In the two previous towers, the hollow legs were carried out mounted atop the floating platform, jacked down to the bottom, and then the platform raised on the legs (ENR Aug. 11, 1955, p. 25 and Aug. 16, 1956, p. 26).

But in this installation, the engineers—Moran, Proctor, Mueser & Rutledge, of New York, Anderson-Nichols & Co. of Boston, and the Navy's Bureau of Yards and Docks—knew it would be necessary to contend with much greater stresses. Hence, bracing would be necessary, and the "standard" erection procedures used on the previous towers couldn't be used.

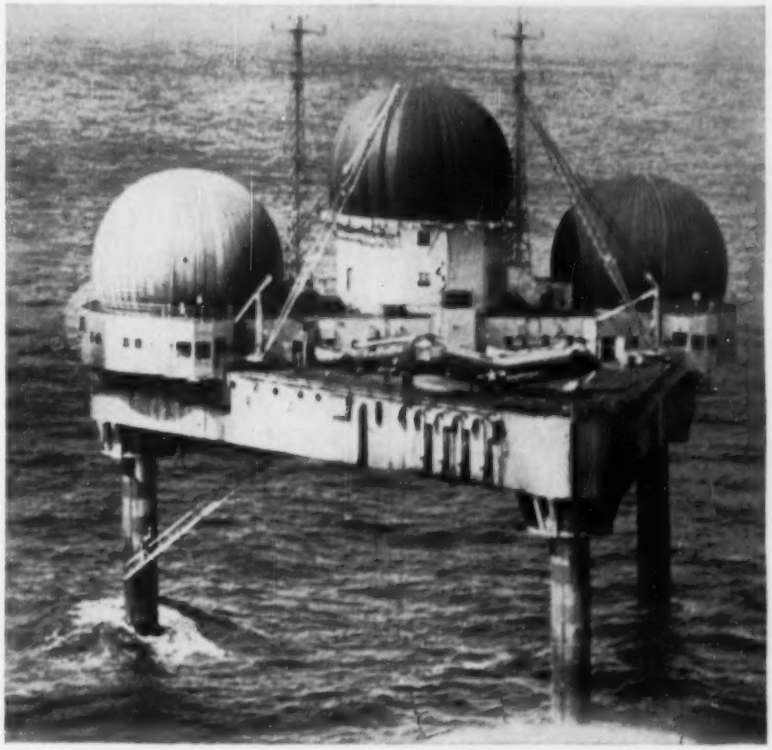
As worked out, the design calls for a 50% increase in normal working stress, allowed for stresses due to lateral forces, and not involving buckling; and 25% increase in normal working stress for stresses due to lateral forces and involving buckling. Design lateral loads are those resulting from a 35-ft breaking wave and wind velocity of 125 mph, acting simultaneously.

What resulted therefore, was a system of horizontal pipebraces at three levels, connected to each other by diagonals. The topmost brace is designed to be 23 ft below the surface of the water when the tower legs are in final position.

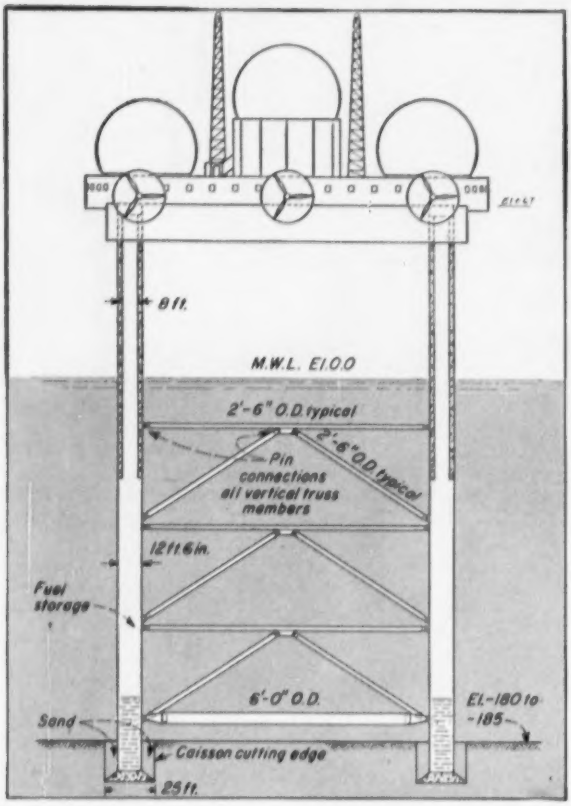
The members (excepting for the lowest cross-strut) are to be 2-ft-6-in. steel pipes pin-connected to gusset plates on the tower legs. The lowest cross-strut—which will be used as air chamber to aid in controlling the turning motion of the tripod assembly while it is being placed—will be 6 ft in diameter.

• **Leg assembly**—Principal component of the tripod leg assembly will be the 12-ft-6-in. pipe legs themselves—different in diameter than those on the previous two towers (10 ft and 14 ft). The diameter in this case was largely influenced by buoyancy requirements in the floating condition of the tripod.

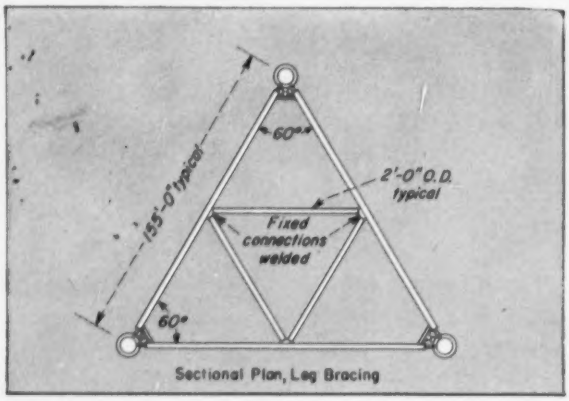
Each leg will be bulkheaded to form three watertight compartments—the lowest being 49 ft long, the next 96



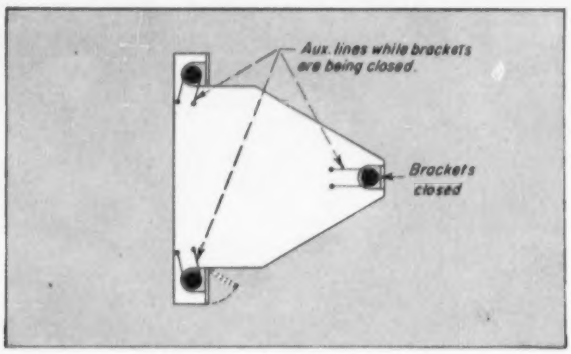
PROTOTYPE is first tower erected off Cape Cod a year ago. Its foundations differ from newest tower in that they are unbraced.



COMPLETED TOWER will present this condition—with fuel storage and water ballast in legs, braces fully extended and connected and buoyancy strut filled with water.



LEG BRACING calls for braces in two directions, against buckling.



TOWER PLATFORM won't be quite triangular in shape as it floats out to the legs. Pre-built brackets (heavy swinging gates) will be closed on arrival, to hold platform to leg during jacking.

ft, and the top one 98 ft. The bottom 15 ft of each main leg will then be enclosed within a second pipe, 25 ft in diameter, which will extend below the smaller pipe a distance of 6 ft to form a cutting edge. This large-diameter "can" at the base will be perforated to accommodate two rings of 24 jet-pipes set one within the other, to aid in sinking the whole assembly into the sand.

The problem for the contractor at the moment is to determine how to assemble the tripod. Most likely plan is to assemble two of the legs floating side by side, erect the bracing system on them, and then assemble the third leg atop the bracing, clear of the water. However, the whole tripod might also be assembled in drydock.

• **Site work**—By far the most spectacular and difficult job, however, will be the problem of placing the legs on firm bottom, bringing the platform to it, and raising it.

As now proposed, the tower will leave shore in two pieces—the giant legs floating as a separate unit, the platform floating like a huge barge.

At the site, the two floating tower legs will gradually be filled with water (starting with the lowest compartment) until their weight brings the tripod upright. Then all three legs will be filled to sink them to the bottom, and jets will bring the cutting edge into the sand for an anchor. The platform will float in, hook on to the special jacks and lift itself into place.

But the problem of controlling the tripod assembly—a structure comparable in height to a 25-story building—as it passes through a 90-deg arc to raise itself to a vertical position, and then sinking it accurately into place, is no simple thing.

• **Controls and anchors**—As originally designed, the tripod assembly was to be completed at dockside to include a temporary working platform—complete wth stiffleg derrick—that would thus be in place when the legs reach a vertical position. Air and other controls necessary to control ballasting would have been housed on that platform.

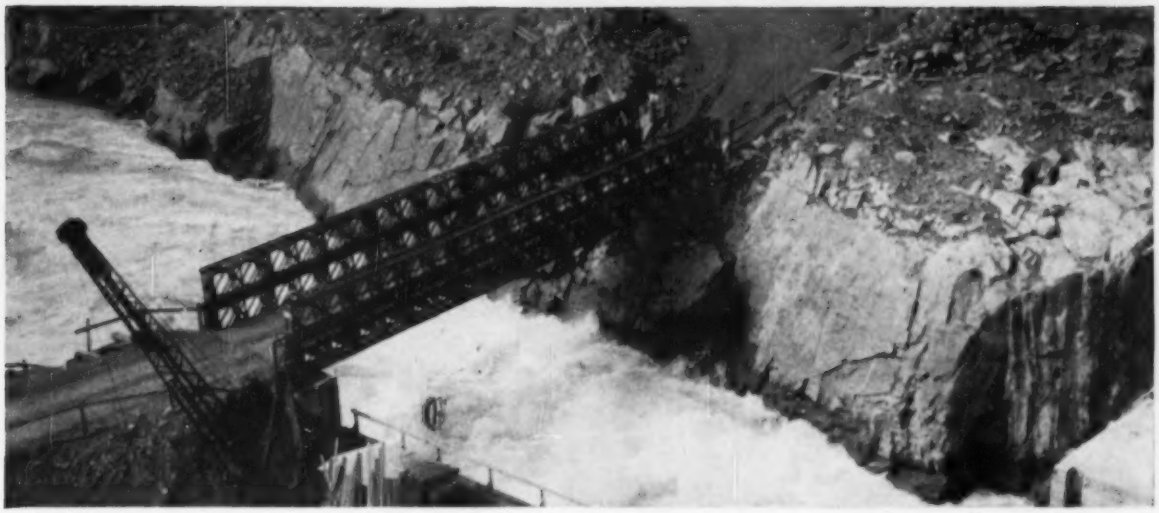
When the permanent platform was floated in, the temporary one would have been raised out of the way, then dismantled.

Basic reason for the temporary platform and the derrick was that original plans called for piles to be driven through the 25-ft-dia "can" at the base of the tower legs to anchor it to the bottom (after which the "can" itself would have been filled with concrete, placed around a previously installed net of reinforcing bars).

But with a change in design requested by the contractor, which now calls for the tower legs to be jetted into the bottom sand, the contractor asked for—and was granted—permission to eliminate the temporary platform and its equipment in favor of a tiny control compartment designed for him by his own consultants, Tippetts, Abbett, McCarthy, Stratton of New York). This control platform will be 18 x 27 ft in dimension, and will hang on a temporary brace as the tripod floats out, swinging to maintain itself in a horizontal position as the leg assembly turns under it. Air compressors control boards and living accommodations for three men will be fitted on this platform. To allow this box to swing freely, and to permit the permanent platform to flat in, the topmost braces will be folded up until the tower has reached a vertical position.

At the site, procedure will be to fill the lower compartments gradually un-

BAILEY BRIDGING



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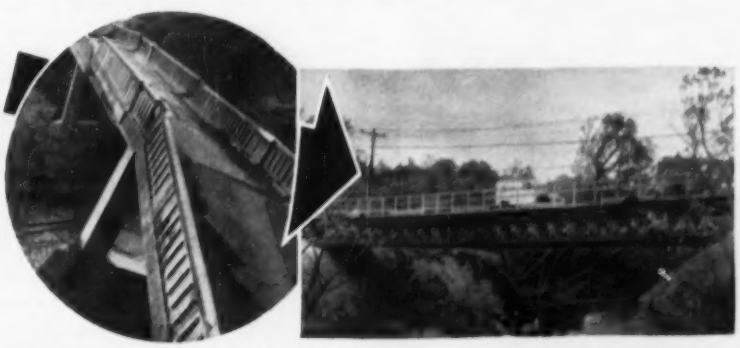
● **Right:**—Application of two-lane, flush deck Bailey Bridge as an emergency replacement for storm damaged permanent structure. Since no extensive design is required, municipal and state highway departments now have a facility for getting traffic rolling within hours where bridges have been damaged or carried away.



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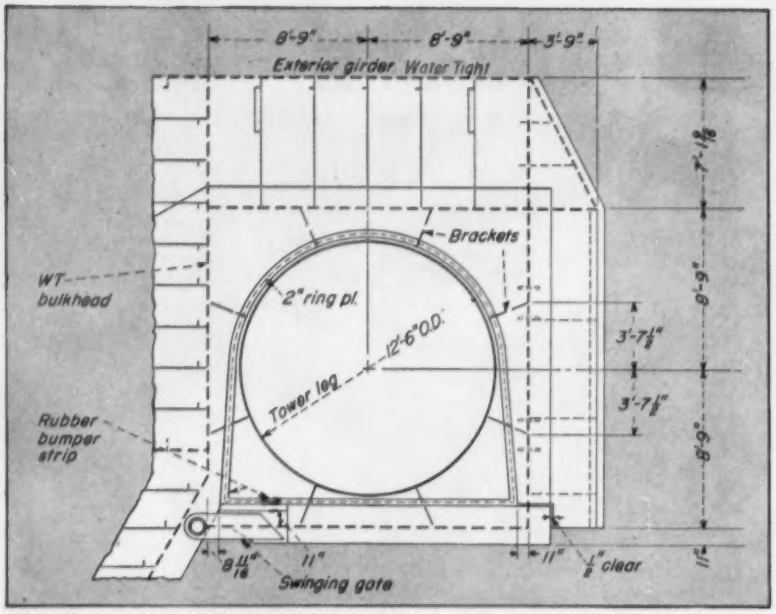

CLOSE CONSTRUCTION TOLERANCES are shown in assembly of platform around leg, placement of brackets to complete construction, once platform is at final elevation.

til the tripod is upright, sink it to the bottom, and use the jets to sink the legs 21 ft into the sand. An airlift will remove the material as sinking proceeds. When this has been done, the mouth formed by the cutting edge will be filled with concrete, and the "can" will be permitted to fill with stand.

Two of the three legs will be left open to their full diameter for a distance of 50 ft from the level of the ocean bottom, to serve as fuel storage tanks. Above this level, an 8-ft-dia pipe will be slipped inside the leg, and the space between it and the outside pipe filled with concrete for weight and stiffening. The third leg, to be finished in a similar manner, will be used for a salt-water intake and stilling basin and for water for cooling the various machines and generators to be installed on the platform itself.

• **Platform**—Bringing the huge steel permanent platform into position, hooking it to its jacks, and raising it safely into position is looked on by some observers as one of the trickiest construction operations to be performed.

As towed out to the site, the steel triangle will have at its corners open U-shaped slots to fit around the tower legs. These slots will be rubber-cushioned, and built to tolerances as close as 2 in.

Each of the slots, additionally, will be equipped with a swinging "gate" that will close the open side of the U as soon as the platform is in place against the legs. These gates are to be heavy structural members—girders 18 ft long and 20 ft deep, built up of 1-in. plates—that will be used to take up some of the load from the jacks when lifting the platform starts, and will become integral parts of the structure on completion.

With the gates closed, jacks on the platform will be attached to pairs of steel wires previously placed on the tops of the tower legs, and the platform jacked up to final position—an arrangement developed by the John R. Roebling's Sons Co. There, while still held by the jacks, braces will be welded between the leg and platform, and necessary "fill in" plates placed for a final connection.

As on the existing two platforms, the new one will be divided horizontally into two decks, to house about 78 Air Force men who will form the permanent complement of the island and machinery and equipment for heating, service, and power for the radar and electronic equipment, which will be installed to permit the island to take up its duties as a guardian against attack.

Two more such towers are being planned for placement along the U. S. Atlantic Coast, but their exact locations and construction methods have not been detailed as yet.

Capt. John J. Albers, CEC, USN, is officer in charge of the project for the Bureau of Yards and Docks, which acts as construction agency for the Air Force. Theodore M. Kuss—who holds the basic patent on the method of erection with bracing in place—is project engineer for Moran, Proctor, Muesser and Rutledge.

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This rugged Dravo-built ore unloader works around the clock at Pennsylvania Railroad's Greenwich Point pier in Philadelphia. A specially-designed man trolley operates the 25-ton bucket with the accuracy and speed necessary for efficient unloading.

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Times change • Needs change

Success goes to those methods to meet

Big jobs ahead call for a review of your equipment inventory . . . a careful review of your earthmoving methods. Some of us old timers go back to the days of team-and-scraper, team - and - wagon, wheel - and - float steam-shovel on earthmoving, with the Fresno and split-log drag for leveling and maintenance.

Then the work dimensions changed and our equipment changed to meet them. Shovels shed their steel wheels, rolled on crawlers. Steam went out and gasoline came in. Trucks replaced wagons . . . tractors, new on the farm, shed wheels for tracks, and tried for a place on the roads.

Load-haul-spread tractor-drawn wheel scrapers took over most of the short-haul production earthmoving. Dynamite replaced black-powder, jack-hammers replaced sledge-hammers and hand-drills. Leaning wheels revolutionized the application range of the early graders.

As job dimensions changed earthmoving machines made further changes. Diesel engines replaced use of gasoline. Rubber-tired prime-movers hauled dirt faster and farther. Off-road rubber-tired haulers replaced most of the highway-type dump-trucks. More power and bigger capacity gave answers to larger projects, shorter hours, higher wage rates.

Now we can see more changes in our problems of today and tomorrow. Answers we found in the power and traction dimensions, together with bigger buckets and bodies, no longer can meet all the needs we face. We must work in the other dimensions

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TOURNAPULL-SCRAPERS—138, 208, and 293 hp models heap 7.5, 18, and 25 cu. yds. fast . . . work and travel on or off-highway at speeds to 29.9 mph. Electric power-steer turns prime-mover 90° . . . rigs make 180° turns in area narrower than machine's length. Power-transfer differential applies traction to wheel on firmest footing.

TOURNATRACTORS—208 hp Model "C" with 24,700 lbs. pull at 1.5 mph . . . works and travels on or off roads, to 17 mph fwd., 7 mph rev. Giant 416 hp TWIN-C TRACTOR, with 65,900 lbs. drawbar pull, loads biggest scrapers easily . . . has power king-pin steer . . . travels at 20 mph, rev. to 5.8 mph. Both have torque converter.

Flexibility for added utility. TOURNAPULL prime-movers earn year-round profits with interchangeable trail-units: scrapper, rear-dump, bottom-dump, side-dump, flat-bed hauler, lift-and-carry crane, and logging arch. Model "D" has added utility with bulldozer and V-type snow plow attachments. TOURNATRACTOR Model C may be equipped with bulldozer, Angle-dozer, push-block, root-rake, railroad car-coupling, winch, side-boom crane, tree stinger, and V-type snow plow and wing. Also pulls wheeled scraper, sheepsfoot-roller, Rooter, and other types drawbar equipment. ADAMS GRADERS available with Elegrader, scarifier, bulldozer, snow plow and wing, rotary snow plow, and snow-blo attachments.

who can anticipate and change today's and tomorrow's needs

of speed and mobility if we are to meet this new and growing challenge of more and more yards to move, longer hauls with greater variables in unit length and quantity, shorter time limits, short labor-supply at even higher wage-levels.

For over twenty years LeTourneau-Westinghouse has been working toward the only possible answers. This was to give you new types of equipment on rubber to increase your performance ability in these dimensions of speed and mobility.

The problem of applying speed and mobility to heavy off-road dirtmoving equipment presented some very difficult engineering problems. Over their 20 years of field experience and improvement, we believe they have found and perfected some real answers to these problems and, today, can give you most for your money in dependable rubber-tired equipment performance applied to the four dimensions of 1. power, 2. traction, 3. speed, and 4. mobility.

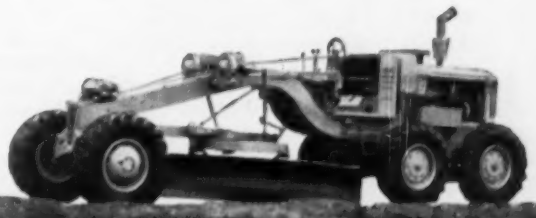
As you equip for the tremendous growth in earthmoving ahead, be sure to study carefully the improved line of LeTourneau-Westinghouse self-propelled scrapers . . . rear-dumps . . . tractors . . . and graders. Every one of these machines is a better machine than we offered last year or in the years before. Every one of them offers big advantages in speed and mobility that will be more and more important to you in solving all the problems involved in the bigger and bigger earthmoving projects ahead of us.

May we suggest that you call us today and ask us to help you check your present equipment inventory and recommend a planned program of replacement and additions to meet your needs for the future. Then take time to see these up-to-date LeTourneau-Westinghouse machines perform on your own job *or on jobs like yours.*

We would also like to suggest that you plan to order well ahead of required delivery. The best equipment for you is best for others, too, and, in spite of a tremendous increase in manufacturing facilities, LeTourneau-Westinghouse is having difficulty keeping up with demands from customers who have already proved the importance and value of greater speed and mobility on their own jobs.

REAR-DUMPS—11, 22, and 35-ton haulers powered by 138, 208, and 293 hp Tournapull prime-movers, haul on or off-highway to 34.4 mph. 90° turn-ability permits 180° turns loaded, in space narrower than machine's length . . . in ¾ of length with dump-body raised. These units dump clear over bank, pull out with front-wheel drive.

ADAMS GRADERS—Heavy-duty models, 20,900 to 27,730 lbs.; 80, 104, 123, 150 hp . . . have 8 fwd. speeds to 26 mph, 4 rev. to 13 mph, and 3 optional creeper speeds. Utility grader, 60 hp, 14,865 lbs., 18.3 mph; 5 fwd., 1 rev., 4 optional creeper speeds. TRAVELOADER, to 26 mph, loads 600 yds./hr.



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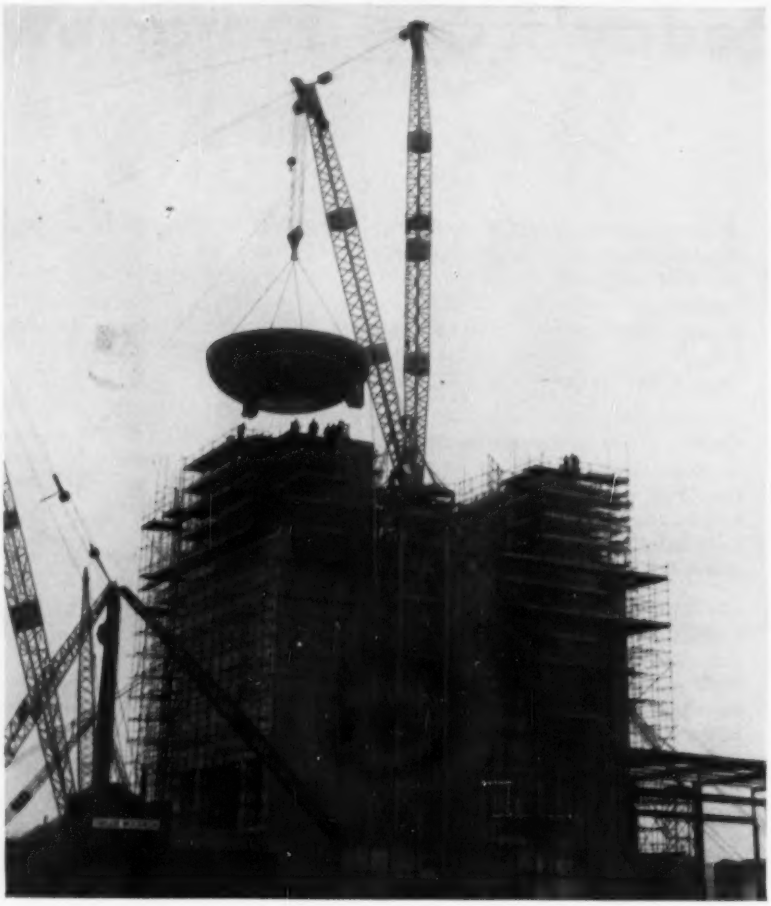
Builders of Britain's 92,000-kw Calder Hall Station met such problems as . . .

- **Site-welding a 100-psi pressure vessel 40 ft in diameter and 60 ft high**
- **Lifting its 100-ton assemblies over 90-ft shield (right)**
- **Heat treating and testing the reactor vessel in place**
- **Placing dense concrete within 0.1-in. tolerance**
- **Calculating deflections in a 35-deg redundant grid**



First Nuclear Plant Goes on the Line

On October 17, in a small village on the northwest coast of England, Queen Elizabeth threw a switch that sent the world's first commercial nuclear power on the line.

The event took place at Britain's Calder Hall Station, the 92,000-kw prototype nuclear plant which is expected to be the basis for most of the 12 nuclear plants the English plan to build in the next ten years. As such, it has great significance for the construction industry because the building of the station involved magnitudes, materials and tolerances never before encountered.

Calder Hall Station consists of: two graphite-moderated reactors using natural uranium as a fuel; two sets of four heat exchangers (wherein high pressure carbon dioxide that cools the piles in the reactors gives up its heat to Calder River water), and four standard 23,000-kw turbo-generators driven by the steam produced in the heat exchangers. The unusual structural components, besides the steel reactor vessel and the heat exchangers, include an 11-ft-thick concrete foundation slab which supports the reactor, a 6-in.-thick steel shield and a 7-ft-thick concrete shield, weighing about 40,000 tons in total.

• **Crash program**—The British began work in 1953 on a crash basis. They knew a sufficient amount about graphite-moderated, gas-cooled reactors using natural uranium—the only system employing this fuel considered safe enough for use in densely populated areas—but then were uncertain about design and fabrication of a 40-ft-dia 60-ft-high steel pressure vessel for 100 psi operating pressure. While the uncertainties were being resolved, work began on the foundation and the shields. And a new problem was created—lifting the reactor vessel assemblies over the shields was going to be a big job.

Concrete for the 11-ft-thick foundation slab was placed in four lifts, in alternate bays. Altogether, 5,600 cu yd of concrete and 270 tons of steel reinforcing were used here.

The outer concrete shield is an octagon, 90 ft high and 7 ft thick and includes 3,000 tons of reinforcement. The octagonal shape, rather than circular, was dictated by shrinkage requirements.

To protect against radioactivity, a dense concrete mix weighing 162 lb per cu ft was specified. This was achieved by using Northumberland Whinstone

Complete 17-mile highway in 120 working days

Big "B", push-loaded by 190 hp crawler-tractor, gets heaped (18 to 20-yard) loads of sandy clay in 35 seconds. Rig made 1325′ round trip in about 3 minutes. On one portion of the contract involving 30,000 yards, haul and return distance averaged 5,000′ one way.

State Highway 4, between Fairfax and Sleepy Eye, Minnesota, needed rebuilding to make it safe for increased traffic. On this 17-mile project, the Minnesota Highway Department awarded a contract to Berghuis Construction Company, Prinsburg, to raise the road-grade, widen shoulders, and dig drainage ditches on each side of the road.

Contract called for moving 465,000 cu. yds. of sandy clay in 120 work days, so Berghuis leaned heavily upon his fast-moving, rubber-tired machines to speed production. The fleet he used for this project included two BIG, 293 hp B Tournapulls, three 208 hp C Tournapulls, one 208 hp Tournatractor, three 19-yard BT scrapers, four sheepsfoot rollers, two graders (one Adams 550) and four crawler-tractors. The 10 rubber-tired LeTourneau-Westinghouse earthmoving units handled 100% of the production dirt . . . kept the job rolling on schedule.

The three nineteen-yard BT scrapers, pulled by crawler-tractors, worked ahead cleaning drainage ditches and cutting down shoulders. Following these crawler-scraper teams, the two 28 mph "B's" and the three 30 mph "C's", push-loaded by 190 hp crawler-tractors, hauled fill from each side of the highway to raise the roadbed and widen shoulders.

"B's" average 18 to 20 yards per load

Since the B Tournapull is a comparatively new machine, you will be interested to know about its performance on this job. Push-loaded by a 190 hp crawler-tractor, each "B" loaded 18 to 20 yards in about a 75′ load distance in 35 seconds, averaged 17 loads per 55-minute hour. Coming out of the loading area, machines traveled in 3rd or 4th gear up a 5% grade for 30′ of the average 600′ haul. Rigs made 50′ spread in a little over 18 seconds. Complete 1325′ cycle averaged 3 minutes.

Likes Tournatractor, too!

Contractor Delwin J. Berghuis, pleased with his Tournapulls, had this to say about his 208 hp C Tournatractor which he used for push-loading, dozing and clean-up assignments: "I am very pleased with the C Tournatractor, and wouldn't be without it. When Tournatractor is used as a pusher for C Tournapulls, it loads the 'C's' faster than the 190 hp crawler-tractors, and has more maneuverability." Operator Edward Dykstra added, "I like its quick, easy-shift transmission. It is fast and very maneuverable in tight quarters. Tournatractor is much quieter to operate than a crawler."

Fast, 17 mph Tournatractor handled scattered dozing assignments in addition to push-loading.

Cut service time

You'll also find that, compared to a crawler-scraper combination, the rubber-tired Tournapulls and Tournatractors take about half the service time to maintain and lubricate.

Look into rubber-tired power

For good production at lowest-net-cost-per-yard on your dirtmoving jobs, investigate these modern, electric-control, rubber-tired machines. Whatever your job, big or small, there's a LeTourneau-Westinghouse unit available to give you *more* work for your earthmoving dollar. Call or write for facts and figures applicable to *your* particular work.

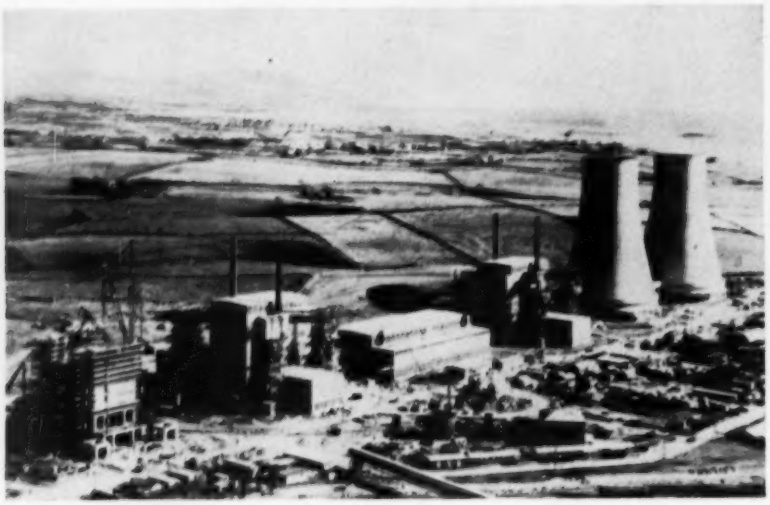
Tournapull, Tournatractor—Trademark Reg. U.S. Pat. Off. G-945-H-b.

LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

ARBA

See you at the ROAD SHOW • Chicago • January 28-February 2, 1957



COMPLETED 92,000-kw plant has standard turbo-generator powerhouse (center) served by two reactors each with four heat exchangers seen on outside. Cooling towers are at far right. Reactor for second station is under construction at far left.

(2.9 sp gr), a dry mix with an air entraining agent and both mechanical and pneumatic vibrators. Addition of calcium chloride to the mix and steam curing allowed concrete placement to proceed through one of Britain's severest winters.

Concrete was placed in lifts of 4½ ft, in alternate sections. To meet extremely rigid tolerances of 0.1 in both elevation and plan dimensions, the full perimeter of the shield was formed and supported by a rigid "spider" network of steel sections.

A steel shield, composed of 500 3-ton plate sections 6 in. thick, was placed inside the concrete shield to protect the concrete from heat and radiation damage.

The four vertical heat exchangers that surround each reactor are supported on separate foundations. They are 80 ft high and 17 ft in diameter, and weigh 450 tons each, fully equipped.

• **Into the unknown**—For design and erection of the pressure vessel, the British called in the leading structural firm of Whessoe's Ltd. which had gained experience on several large pressurized supersonic wind tunnels and a spinning tunnel in connection with aircraft testing. Whessoe's had realized vital new data there on complex stress distribution in thick-plated vessels caused by large cut-outs. In working out the reactor design, Whessoe's felt it was penetrating to the outer limits of its knowledge regarding stress distribution, site welding, and materials used. Also, dimensional tolerances not previously achieved had to be guaranteed.

Welding was the most critical consideration. The size of the Calder Hall vessel precluded even partial shop fabrication where heat treatment of the metal could be carefully controlled. And in addition to the normal temperature control difficulties with site welding, sub-zero temperatures were expected during fabrication.

The designers developed an aluminum-killed low-carbon manganese steel having a yield point of about 60,000 psi and chose 2-in. plate as the thickest that could be safely welded at the site. Tensile strength had to be sacrificed to the need for a low carbon steel which would have the required notch strength for crack resistance. The plate thickness largely set the gas pressure at 100 psi, which is considerably below the optimum for heat transfer.

• **100-ton lifts**—In the fabrication, the reactor vessel was divided into five assemblies weighing up to 100 tons each —top and bottom domes, two cylindrical center sections and an internal steel grid that supports the graphite piles. Each section was welded on the ground and lifted 120 ft over the shields.

Both in the reactors and the heat exchangers, every foot of weld was radiographically tested and the plate ultrasonically examined. The heavy loads were handled by a 150-ton guy derrick, the largest ever erected in Britain.

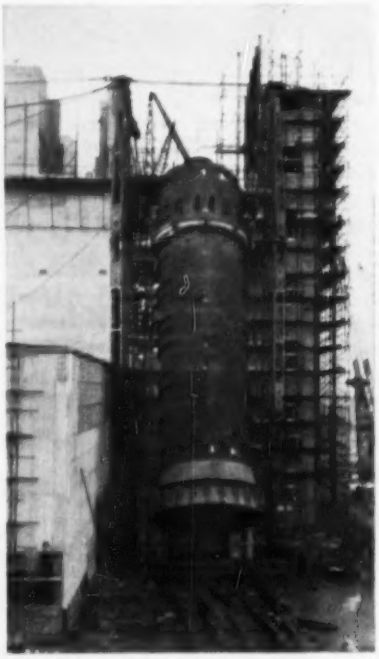
After the reactor vessel was assembled in final position, it was stress-relieved by converting it into a large oven. External lagging was applied and the inside was heated with a 1,500-kw element and then cooled at a controlled rate.

• **Test under air**—Testing was also unconventional since normal hydrostatic testing was impossible because the weight of water would have overstressed the foundation slab. The vessel was air tested to 130 psi after it was determined that a possible explosion resulting therefrom would be safely contained by the shields.

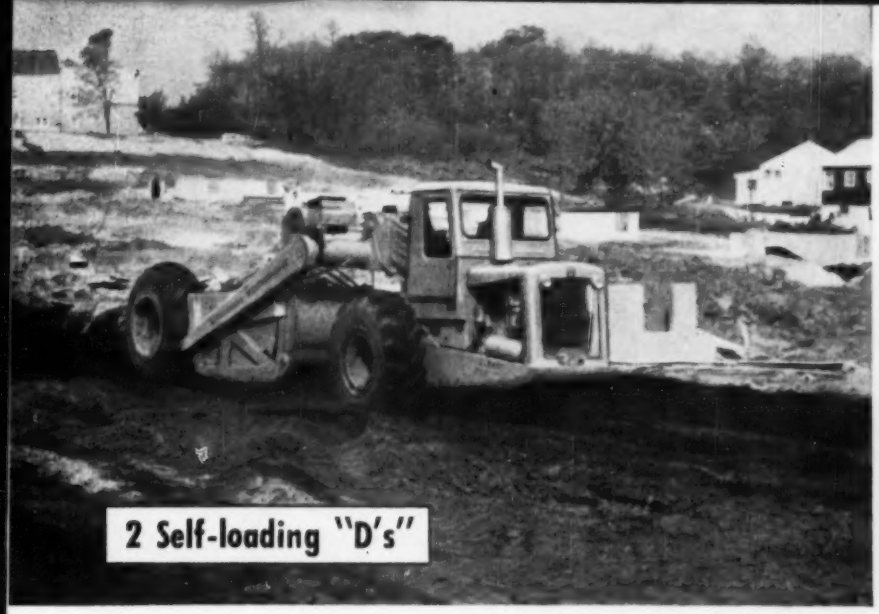
Strain gages were placed all over the vessel but it was the internal steel grid, a 61-ton network of deep beams tied by a huge ring girder, that posed the most complicated stress distribution calculation. When loaded with 1,200 tons of graphite and uranium fuel, deflection of the highly redundant grid had to be know precisely and be reduced to a minimum. A set of 35 simultaneous equations resulting from strain gage readings was resolved in an electronic computer.

The generating plant is conventional except for low steam conditions and separate "dump" condensers capable of accepting the entire steam output of the reactors without passing through the turbines so that the reactor can remain in operation regardless of the electrical demand. Steam is drawn from the heat exchangers at two conditions: 200 psia and 590 F and at 53 psia and 340 F.

• **Economics of A-power**—In this first British nuclear power plant, the primary functional purpose is the production of plutonium. Power production,



HEAT exchanger weighing 200 tons is swung into place by two 100-ton gin poles.



Lack of good haul roads made little difference in the operation of E. R. Fenwick's D Tournapulls on the Ocean Manor housing project. Big, low-pressure tires carried the "D's" over raw, rutted earth, crossed new paving without damage to slab.

Maneuverability of "D's" saved time, cut down length of haul routes. Tournapulls were able to work close to buildings . . . turn sharply between partly-completed houses . . . spread topsoil accurately on lots.

Rains turned home site into quagmire on some days. But Fenwick's self-loading "D's" operated at near dry weather efficiency. Big deep-treaded tires gripped slippery surfaces, power-transfer differential shifted traction to drive wheel on firmest footing. King-pin steer "walked" it out of ruts.

handle 30,000-yd. subdivision job

grade and spread topsoil for 300 new homes

Working two 138 hp D Tournapulls as self-loaders, E. R. Fenwick of Matawan, N.J., was able to move 30,000 yds. of red gravelly clay in less than 3 months at the new Ocean Manor Heights home project of Middletown, N.J.

The construction firm of Sommer Brothers, Iselin, N.J. is building 300 homes in this big development project. The real estate firm had Fenwick's Tournapulls grade the area, cleaning up and spreading topsoil around nearby completed homes.

Operate easily between houses

Working in areas where deep ruts, caused by previous work traffic, criss-crossed the ground, the two Tournapulls made fast, sharp turns between nearly-completed houses. Ability to turn at a 90° angle enabled "D's" to round the sharpest corners easily for accurate "on-a-dime" spot grading.

Footing was poor, for the work was done when working surfaces were wet and slippery with rain. Tournapulls maintained production schedules in spite of bad weather. On wet ground, Tournapull's power-transfer differential automatically transferred traction to the wheel on firmest footing.

The "D's" low-pressure tires proved an advantage in working land where considerable new street paving had been done, too. Tournapulls crossed and recrossed these streets many times each day without damage to tires, new blacktop or concrete.

Best for narrow spaces

"You just can't beat Tournapulls for getting in and out of those hard-to-get-at places," commented owner Everett Fenwick. "They're fine for cleaning up an area after houses are up. 'D's' are economical to operate, too. I have 3 'C's' in addition to my 2 'D's'," he continued. "The combination is tops for any earthmoving project."

Fenwick has worked his rigs extensively through New Jersey. They were used on the Garden State Parkway project, and to grade semi-frozen ground for a new Esso Standard Oil Company Plant during off-season winter months.

There's a Tournapull for your job

The improved "D" now has capacity of 9 yds. heaped, with 8' width, and permissable axle-load which requires no special roading permit. Larger 18-yd. "C" and 25-yd. "B" Tournapulls handle heavy production earthmoving with top efficiency. Write for details.

Ask your LeTourneau-Westinghouse Distributor to recommend the right size and type of interchangeable Tournapull equipment for your work. His file of owner-verified facts will show just what Tournapulls can do for you.

Tournapull—Trademark Reg. U.S. Pat. Off. DP-1005 8-b

LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

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The world's foremost drawing pencil now comes up with an added convenience for busy Pencil Pros.

No more groping and picking up the wrong pencil. Castell *Color-Grade coding is a simple device to give you instant identification in every popular degree—from B to 9H inclusive.

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*Reg. U.S. Pat. Off.

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although actually the more significant aspect, is a by-product from the heat of the reactor. However, because Calder Hall was designed as a plutonium facility, the heat of the pile is well below the optimum for power production—carbon dioxide coolant will be circulated at 638 F. Thus, unit costs, either per kw or kwh, have no real meaning.

But the 12 nuclear stations planned by Britain's Central Electric Authority at a 10-year cost of $980 million, will be designed for higher pile and coolant temperatures and maximum power output. Bids already submitted for the first two CEA stations, in the 200,000 to 300,000-kw category, indicate nuclear power will cost between 5 and 7 mills per kwh. The best of Britain's coal-fired stations cannot do better than 7 mills, with local coal costing $11 a ton. Imported coal costs Britain $28. The nuclear cost figure includes an allowance for the value of by-product plutonium of between $6,000 and $13,000 per lb.

• **Comparison with conventional**—Capital costs of nuclear stations of the graphite-moderated, gas-cooled type will probably run about 2½ times conventional stations. A breakdown prepared by the Calder Hall contractor, but for a 150,000-kw plant, puts the reactor cost at $22 million, the steam plant at $25.2 million and utilities and site work (including cooling towers) at $6.7 million. To this must be added $14 million for the cost of the uranium fuel, for a total $480 per kwh.

Calder Hall was built by the government's Atomic Energy Authority, at a cost of $56 million. The AEA now has under construction at the same site a second plant, identical to the first, scheduled for completion in 1958.

The first of the 12 Central Electric Authority plants is due for completion in 1960. At least 8 of these will be of the Calder Hall type. The others may be sodium or water-cooled reactors.

AEA and CEA believe the graphite-moderated gas-cooled reactor will prove economic because it uses cheaper natural, rather than enriched, uranium; carbon dioxide coolant is cheap and plentiful; and increased operating temperatures and pressures should be achieved as more experience is gained.

Calder Hall Station was designed by personnel of AEA. Taylor Woodrow Construction Ltd. held a contract for the site and concrete work.

Norway, Russia Join on Pasvik River

Norwegian and Russian plans for a joint venture hydroelectric development of the Pasvik Valley area gained further headway last month as engineering teams from the two countries concluded preliminary survey work.

Three dams—Skilterfoss, Skogfoss, Hestfoss—are under consideration for the Pasvik River which is the common border between the two countries. Two of the projects will be owned by the Russians and one by Norway, although reliable sources say that Norwegian contractors will build all three.

Purpose of the survey was to determine how much of the valley area would be inundated by the proposed dams' reservoirs.

Negotiations between the two countries have been under way for some time and engineers have already presented plans of the venture to both governments. Norway expects to vote on the proposal early next year.

Total potential of the three stations, which will cost about $30 million, is expected to be in excess of 100,000 kw with a year-round average of 75,000 kw.

The Pasvik River originates in Lake Inari in Finland at just about the beginning of the Norwegian-Russian border so that 25 miles of the river are in Russian territory and 50 miles form the mutual border.

Russian eagerness to get the Pasvik project started is indicated by their development of industry in that area. For one thing, some of Russia's biggest nickle mines are only a few miles from the Pasvik.

Norway is just as interested in the project because in the past they have had a critical shortage of electric power in that area, which has required rationing current to householders on a year-round basis.

This Booklet shows...

...how Transite Sewer Pipe saves in **4** important ways

Selecting the right pipe material for a new sewage system—or for additions to an existing one—is a problem of major importance to *all* concerned in influencing a choice. *And* it can be solved to *the complete satisfaction of both installer and user* with economies in each of these stages—(1) system design (2) installation (3) operation and (4) maintenance.

Engineers thinking in long-range terms of thoroughly proved sewer main performance . . . contractors interested in serving community needs at new lows in installed cost—both should know all about Transite® Pipe and the Ring-Tite® Coupling. Here is a new booklet that tells and shows how Transite Pipe reduces infiltration, keeps out roots; maintains high flow capacity; speeds installation; permits designing the system for savings. Send the coupon for it today.

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Union Tufwire provides mighty tendons of strength in

NATION'S LONGEST PRESTRESSED CONCRETE GIRDERS

146 feet long, the precast, prestressed concrete girders framing the roof of the new Parkview High School Gymnasium (Springfield, Mo.) are believed to be the longest ever constructed in this country.

12 Tufwire high tensile wires (0.250" dia.) form the prestressing strands. There are 16 strands in each girder. These Tufwire high tensile wires have an ultimate strength of 240,000 psi, making possible the high compressive stress built into the concrete by prestressing.

One of the giant girders approaches the top of the columns. While it awaits connection to the columns, the girder is supported by a 132-pound steel rail inserted through holes at the sides of the columns.

The giant girders are supported on unique twin concrete columns, and tied to them by prestressed rigid joints. The girders were cast and prestressed on the concrete floor of the gymnasium, and hoisted atop the columns by the same hydraulic jacks used for prestressing. Then strands providing the continuity of the joint between girder and columns were placed and stressed.

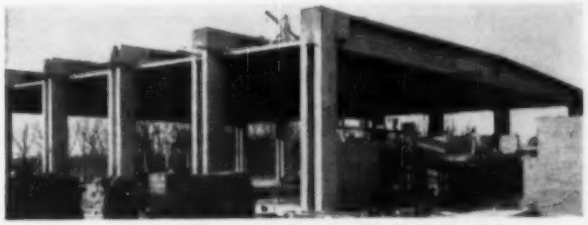
This new building impressively points up the advantages of prestressed concrete construction: longer spans, greater strength-to-weight ratio, lighter foundations and substantial savings in building time and costs.

Union Wire Rope Corporation's advances in developing better high tensile wire and strand helped open the way for the present trend to prestressed construction. Today we're supplying Tufwire Stress-Relieved Wire and strand for projects ranging from the world's longest highway bridge (over Lake Pontchartrain, Louisiana) and the nation's biggest highway-building program . . . right on down to light poles and farmers' fence posts. The jobs don't come too big or too small!

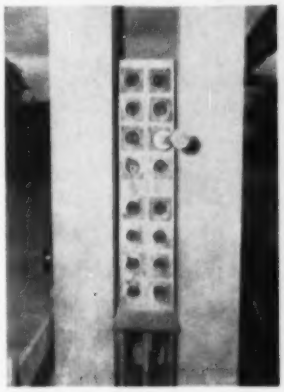
CERTAIN SUPPLY — PROMPT DELIVERY

That's what you're assured when you specify Union Tufwire wire and strand. The research and production facilities of Union Wire Rope Corporation have been geared to the seven-league strides of prestressed construction since the trend began shaping up a decade ago. Our expanding plant capacity and Mid-America location mean prompt service for your order.

Have a problem? Whether you're an on-site contractor or a permanent casting-bed operator—or want to explore the advantages of prestressed concrete in your field—get in touch with our engineering department and research laboratories. We'll gladly lend a lift with any prestressing problem.

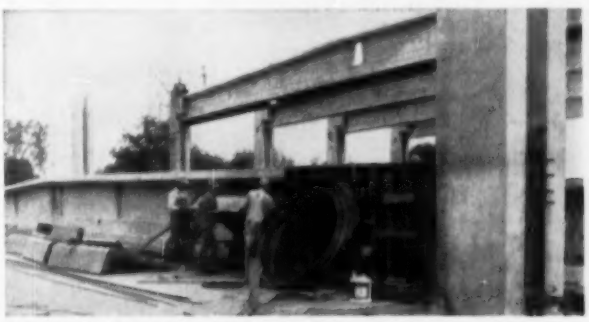


Precast channel roof slabs rest on the lower flanges of the girders, providing a smooth ceiling inside the building. You can see in this picture how continuity stressing rigidly holds columns and girders together.



The 16 prestressing strands are shown in position in the girder ready for post tensioning. The girders are seven feet deep at center, tapering to 5.5 feet deep at each end.

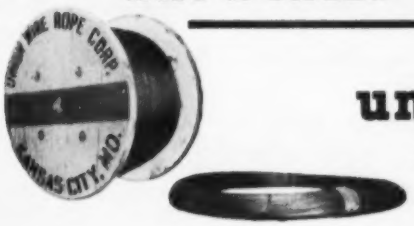
Holes formed by rubber cores in the end block receive the Tufwire strands with which the girder is joined to the top of the column by post tensioning.



Tufwire in coils ready for placing in the girder after removal of forms.

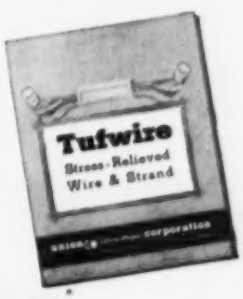
union
Tufwire

Stress-Relieved Wire & Strand



Get this booklet now!

It's a comprehensive handbook that gives you important facts about prestressed concrete. Plus complete specifications and data on *Tufwire* as used in both pretensioned and post-tensioned prestressing. No charge.



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Aluminum Roofing and Siding Applicator:
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Alloy:	Alclad 3004-H16; .032 in. thick (20 B&S gage)
Sheet width:	48 inches
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End laps:	Steep slopes: 6 in. min. Shallow slopes: 9 in. min.
Weight:	0.96 psf including fasteners and layer of felt

Two of the world's largest aircraft hangars shelter the Navy's blimps at Lakehurst. They cover 640,000 square feet . . . stand 175 feet high . . . have a roof area of nearly a million square feet.

Alcoa Aluminum Roofing Sheet met every requirement for this job: light weight . . . ease of application . . . ability to stay tight . . . strength to withstand winds up to 120 mph. The corrosion-resistant, rustproof performance of aluminum also made it desirable from the standpoint of maintaining minimum maintenance expenditures.

The sheets were made available in a special 48 inch width that saved application time and greatly reduced lapping waste. For full details on the Lakehurst Naval Air Station job as well as complete information on Alcoa industrial roofing and siding materials, contact nearest Alcoa sales office. Or write Aluminum Company of America, 860-K Alcoa Building, Pittsburgh 19, Pa.

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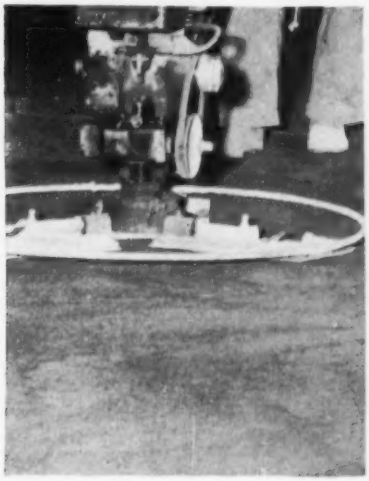


Blend of Abrasive Grains Hardens Concrete Floors

Advantages claimed for a new concrete-floor hardener include good traction and resistance to rust and acids. Called Aloxite Aluminum Oxide Floor Hardening Grain, the product is a blend of abrasive grains. Suitable for either old or new floors, the material requires the same application techniques and equipment as for other hardening materials. The usual sequence of steps is power floating, then power troweling, finally hand floating. According to the manufacturer, Aloxite costs less than other hardeners. ELECTRO MINERALS DIV., THE CARBORUNDUM CO., NIAGARA FALLS, N. Y.

Mercury Lamp Sends Twice As Much Light Down as Up

General Electric now makes a 1,000-w mercury lamp that directs most of its light downward. Designed for medium and high mounting in industrial plants, the lamp has a phosphor coating on its lower half so that two-thirds of the light shines down, one-third up. This means that the lamp itself directs more light, the fixture less, in contrast to usual installations.

GE engineers expect the new lamp, G-E H1000 RC 15, to trim about 15% off the cost of lighting with an earlier phosphor-coated model, H1000 RC 15. Rated output is 53,000 lumens. Operating voltage is 265 v. A companion lamp, however, H 1000 RC 12, operates at 135 v. Both lamps utilize the same bulb—15⅞ in. long, mogul base — and have similar light distribution. GENERAL ELECTRIC CO. LAMP DIV., NELA PARK, CLEVELAND 12, OHIO.

Tile Cutter Lasts Longer With More Diamond on Edge

Eveready BrikSaw Co. announces a masonry-cutting blade with an extra ⅛ in. of diamond on the cutting edge. Bringing the total depth of diamond to ⅜ in. is an improvement said to extend the life of the tool, BD-135-3, considerably beyond that of blades with the normal ¼-in. deep diamond rim. The blade is designed for cutting glazed tile and other vitrified masonry. EVEREADY BRIKSAW CO., DEPT. 241, 1509 S. MICHIGAN BLVD., CHICAGO 5, ILL.

Vinyl-Coated Steel Sheets Unite Looks and Strength

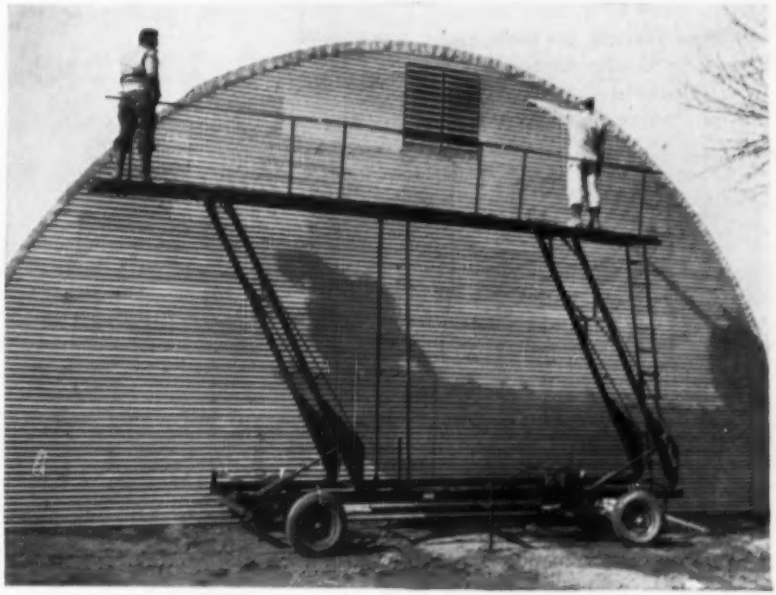
U. S. Steel is experimentally producing vinyl-coated steel sheets. Intended for use in such products as wall panels, furniture, and auto bodies, the material is made in a variety of colors and textures.

The plastic coat is said to impart to the sheets such qualities as wear resistance, good acoustic properties, high electrical resistance and resistance to damage by humidity and many chemicals. And since the plastic is the decorative surface, no painting is required.

The pilot facilities will produce 18- to 28-ga sheets 24 to 52 in. wide. The semi-commercial product is being offered for sale on a developmental basis. UNITED STATES STEEL CORP., 71 BROADWAY, NEW YORK 6, N. Y.

New Magnesium Hose Guard Stands Up Under Heavy Load

For the protection of hoses up to 4 in. in diameter, and the maintenance of traffic flow at points where a fuel water or air lines must be run through



Scaffold Is in Operation in Seconds

Production of a new hydraulically operated, self-contained portable scaffold has been announced. Called the "Jim Dandy" the unit is designed to eliminate costly set-up and knock-down time. Said to be versatile, light in weight and economical to operate, the machine will elevate loads of 2,500 pounds to 16 feet and provides platform space for several men. Adam Company, P. O. Box 628, Perry, Oklahoma.

High Early Strength

Cold Weather Safety

Higher Ultimate Strength

Get All 3 By Adding SOLVAY Calcium Chloride To Cold Weather Concrete

You can offset the strength and time losses resulting from temperatures of 50°F. or lower *and gain in ultimate strength* by adding Solvay Calcium Chloride to your concrete mix.

Speed finishing, remove forms earlier, save 2—4 days operating time. Get all the facts and figures in the booklet entitled, "The Effects of Calcium Chloride on Portland Cement".

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☐ "The Effects of Calcium Chloride on Portland Cement."

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travel areas, Copperloy Corp. has produced a new, portable hose ramp. Made of magnesium, the standard ramp is 36 in. long, 16 in. wide, weighs 20 lb and will support loads up to 10,000 lb (extra heavy units for carrying loads up to 40,000 lb each, are also available). In all models diamond plate safety tread provides traction. Heavy neoprene belting holds opposing ramps together and permits folding of the sections for easy storage.

Facets of Light Diffuser Are Small Plastic Prisms

For installation in fluorescent troffers, luminous panels and luminous ceilings, Holophane has introduced Prismalume Controlens, a plastic light diffuser consisting of small prismatic elements. With transverse and longitudinal fins, the diffusing surface—formed concave downward—is said to eliminate glare completely. The product is designed for use in offices, stores, showrooms, schools and other public areas. Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y.

Temporary Steam Service

A mobile unit offering prompt temporary steam service has been designed to offset boiler breakdowns and steam failures. The new unit, designed by the Clayton Manufacturing Co., simply drives up to the desired location, flexible connections are made and in a few minutes steam pressure up to 150 psig is available with from 10 to 100 hp. Clayton Mfg. Co., El Monte, Calif.

German Trencher Takes on Side Slopes

A German firm is producing a one-man trenching machine capable of cutting 250 ft of trench to a depth of 6 ft in an hour.

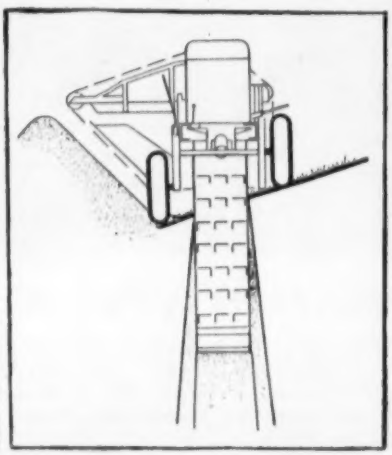
Cable propelled by means of a light angle iron anchor, the trencher is rubber-tired and can be run forward or backward, and steered around corners at variable speeds.

One of the principal features of the machine is a set of hydraulically positioned rear wheels which can be raised or lowered independently to compensate for side-slope, and thereby permit vertical trenching where uneven ground conditions exist.

Its hydraulically controlled milling beam is said to slide over objects too large for the chain and then immediately readjust itself to the desired preset depth.

Trench widths can be cut at 27, 15, or 11 in. and a movable broaching chain allows dumping at either side of the trenching machine. Eberhardtwerke, Ulm/Danau.

(*New Products continued on page 60*)



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Gardner-Denver Air Trac®—this self-propelled crawler-mounted drill packs a punch in any terrain. The Air Trac is self-stabilizing, fast drilling.

Gardner-Denver Rotary 600—continuous and reliable air power in any weather . . . at any altitude. Extra easy to maintain in the field. Easy on fuel.

Contractors say:

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Gardner-Denver wagon drills—they're hard hitting, mobile, easily positioned for accurate hole-spotting. Readily handle angle holes, toe holes, line drilling.

Gardner-Denver S48—fast-drilling sinker.

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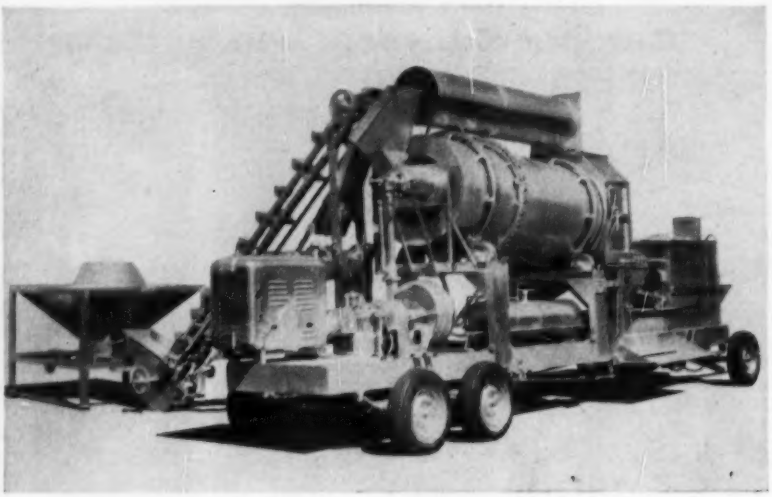
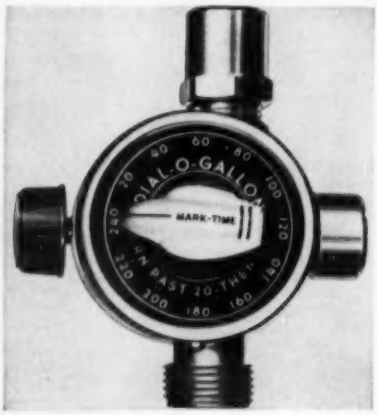


Hot Mix Plant – Portable or Stationary

A new asphalt plant, Model L-10, has been announced by the White Company. Available as either a portable or stationary unit, it has a 1,000-lb capacity batch mixer and is rated at 20 tons per hour (hot mix). This rating is based on a discharge temperature of 300 F. on a 70 F. day using an aggregate with a 5% initial moisture. The plant can be used for not only hot mix but also for cold mix or any other bituminous formulas.

The machine's two compartment feeder can be built up to carry large quantities of aggregate. The equipment on the plant is driven by a single power unit, which can be a 50 hp engine or a 30 hp electric motor.

Air for the control gates, dryer drum, aggregate measuring hopper and the pug mixer is supplied by a built-in air compressor. Only two men are required to operate the plant. White Mfg. Co., Elkhart, Indiana.



Water Saver

A new water saver that measures water automatically and accurately simply by setting a dial was announced last week. Called "Dial-O-Gallon", the water control valve is easily installed, according to the manufacturer, and will operate in any position. Water pressure variations does not affect the operation. Dial-O-Gallon, Inc., 39 N. Helen Ave., Mansfield, Ohio.

Insulating Batts Are Made Of Basalt Volcanic Rock

From Sweden comes Basaltwool, a fibrous insulating material made from basalt volcanic rock. It has thermal and acoustic insulating properties comparable to other fibrous insulating materials, according to claims made by the manufacturers, but can withstand higher temperatures than most—up to 1,700 F. for short periods.

The fibers are about 20 microns (0.00078 in.) in diameter and range in length from 1½ to 3 ft. Being inorganic, they are said not to be subject to decay. Nor will the material induce corrosion in adjacent metals.

Formed in batts and stitched with wire, the long fibers are said to hold together without the aid of a binder, even when the batts are subjected to high-velocity air flow.

Batts are available in widths and thicknesses suitable for most heat and sound insulating applications, and in densities varying from 3 to 6 lb per cu ft. Thermo-Sound Products, Div. of Kittell-Lacy, Inc., 10816 E. Fawcett Ave., El Monte, Calif.

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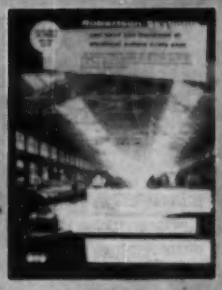

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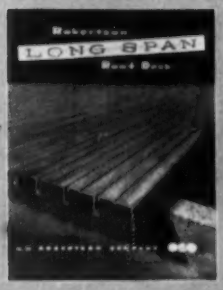

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Write- for these free books from Robertson's technical library

1. Acoustical Data on Q-Deck: It has long been known that the fluted underside of steel deck provides some acoustical value, yet demand for more has led to this new low-cost method. Application details and test data are included.

2. An Analysis of Industrial Roof Construction: This valuable booklet compares all the better-known roof types (flat, monitor, bow-string, high-low bay, saw tooth) on the basis of structural steel, volume, roofing, sash area, flashing, ventilation and daylighting.

3. Design and Cost Factors of Structural Floor Wiring: This study compares Q-Floor with other conventional floor systems using underfloor duct. Based upon a typical multi-story building, the book is replete with charts and cost analyses of all structural components.

4. Daylighting Cost Analysis: This new and unusual study contains a questionnaire, which when properly filled out will reveal how quickly scientifically planned natural daylighting will pay for itself in a structure through savings in electricity. All data are substantiated.

5. New Composite Q-Floor Catalog: This newly revised catalog contains many examples of the latest Q-Floor buildings and a full exposition of Q-Floor advantages. Structural details and specifications are more complete than ever before.

6. New M-Type Q-Panel Catalog: Recent newcomer to the Robertson product family is the M-Type Q-Panel which possesses unique advantages over other types of modern curtain wall construction. The book contains 3 pages of structural details plus complete specifications.

7. New Long-Span Q-Deck Catalog: Another new Robertson product is this sturdy, yet exceptionally long-span deck. Easy to handle and erect despite its length up to 32 feet, it is especially designed for schools and supermarkets and other structures in which unbroken spans and a saving of structural steel is beneficial.

8. Ventilation Engineering Booklet: More than a ventilator catalog, this booklet not only describes products, but contains detailed tables of exhaust capacities, based upon average wind velocities, temperature differences and height above intake. Use the coupon below.

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for modern buildings

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2420 Farmers Bank Building, Pittsburgh 22, Pa.
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Offices in Principal Cities

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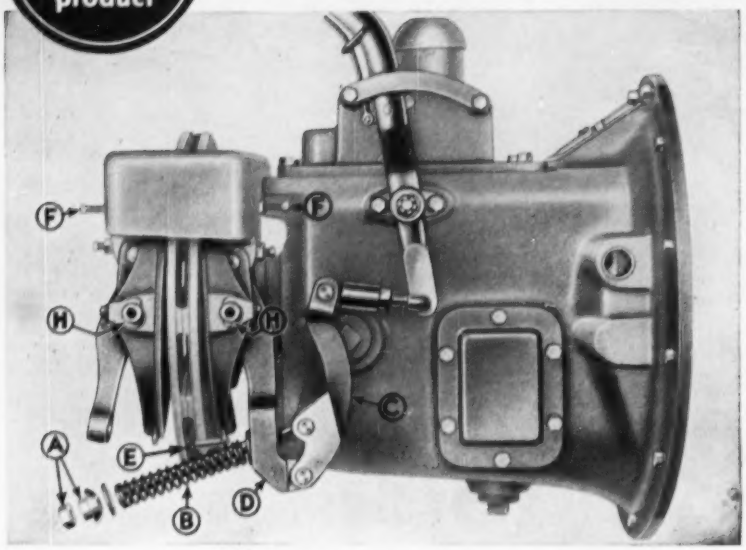
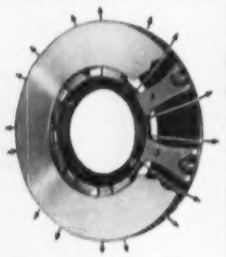
It Pays to Specify TRU-STOP Brakes



How TRU-STOP Brakes save more money than they cost!

TRU-STOP performance in just one emergency may more than offset any additional first cost. But their true economy shows up when it comes time to adjust or reline.

TRU-STOP brakes are adjusted and relined *without dropping the drive shaft.* Both are quickly and easily done with only a few simple tools. Down time is reduced to a minimum.



Longer Lining Life

• The terrific heat generated in braking cuts lining life. TRU-STOPS quickly dissipate this heat. Most of the disc is exposed to the air even during braking. And a cooling jet of air circulates through the disc, prolongs lining life.

See how easily adjustment is made

(illustration above)

1 Tighten nut A so that spring B exerts enough pressure to bring lever C to stop solidly against lever arm D.
2 Insert 1/32" shim between front shoe lining and disc and adjust pull-rod to maintain this clearance, first being sure to have hand-lever in full release position.
3 Further tighten nut A so that rear shoe lining is firm against disc but so that shim in front can still be removed. Remove shim.
4 See that tension spring E is in place, then adjust screws F so that linings are parallel with disc.

See how easily relining is accomplished

1 Remove nut A.
2 Remove spring E.
3 Apply hand lever so that rear arm can be swung back clear of tie rod and spring.
4 Remove shoe pin locks H, and drop shoe.
5 Replace relined shoes and adjust as per instructions.

ACCO TRADE MARK

For full details write for booklet

Automotive and Aircraft Division
AMERICAN CHAIN & CABLE

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2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

Publications

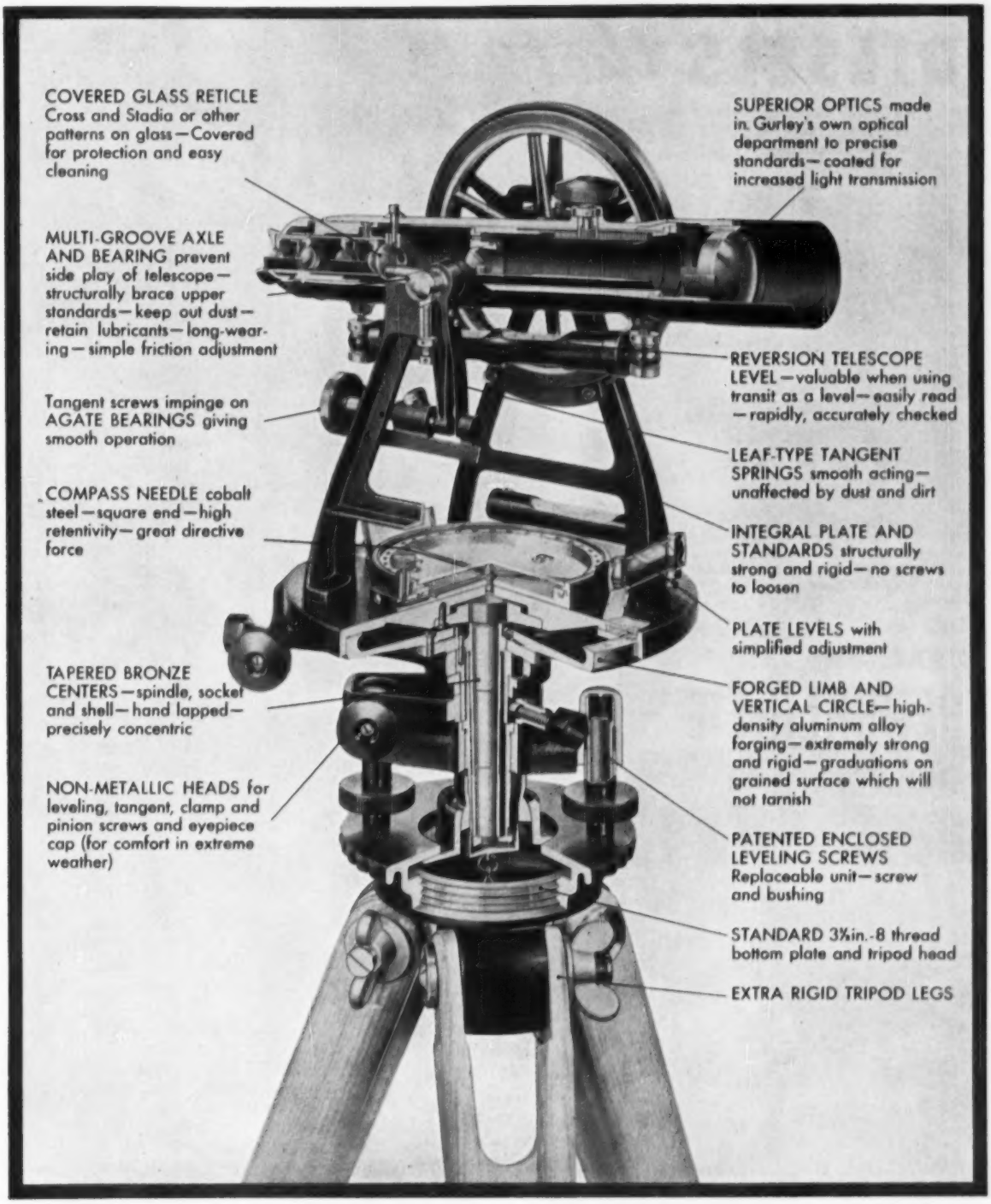
Activated charcoal—A 58-page catalog illustrates how activated charcoal can be used for air recovery, odor removal, air purification, food preservation and as a solvent recovery. An equipment section presents a line of activated charcoal filters and circulating units with air capacity, dimensions, resistances, horsepower, weights and other equipment essential to equipment selection listed. A bibliography and further studies being undertaken on the use of activated charcoal are contained in the third section. PUR AIR DIV., BARNEBEY-CHENEY CO., COLUMBUS 8, OHIO.

Tractors and scrapers—A comprehensive operators guide for Caterpillar wheel tractors and scrapers has been published by the manufacturer. The 24-page booklet explains the proper operation of rubber-tired earthmovers in all phases of their work and includes tips on loading, hauling, dumping and returning. An explanation of proper shifting and use of scraper controls is included, and, for operators, there is a simple but comprehensive check list of important preoperation inspections. Form 32022, CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS.

Foamed-glass insulation—A 24-page illustrated booklet, FB-101, contains procedures for applying Foamglas, a cellular-glass insulating material, on flat and pitched roofs, parking decks, curtain and core walls, wall linings, ceilings and perimeters. Tables and charts show physical properties of the material; heat transmission constants (U values) for various roof, ceiling and wall assemblies —with and without insulation; and the U valves required to prevent condensation under a number of conditions. PITTSBURGH CORNING CORP., 1 GATEWAY CENTER, PITTSBURGH, PA.

Prestress steel—A 16-page booklet on Tufwire and Tufwire strand contains tables of size, weight, strength and standard reel lengths. Brief prefaces explain what prestressing is, how it began and the difference between pretensioned and post-tensioned concrete. Also included are two typical stress-strain curves—one each for wire and strand—and several photos depicting prestressed concrete projects. Prices are quoted in a separate folder. UNION WIRE ROPE CORP., 2100 MANCHESTER AVE., KANSAS CITY 26, MO.

Smooth air flow—Facts and figures on performance of Uni-Flo Airturn, an assembly of curved vanes designed to smooth the flow of air around abrupt


COVERED GLASS RETICLE Cross and Stadia or other patterns on glass—Covered for protection and easy cleaning
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COMPASS NEEDLE cobalt steel—square end—high retentivity—great directive force
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PLATE LEVELS with simplified adjustment
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STANDARD 3⅝in.-8 thread bottom plate and tripod head
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Mainland Construction Co., Texas City, Texas, using 155 Trenchliner powered by Model 195-DLCU Waukesha Diesel

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TRENCHLINER
powered with
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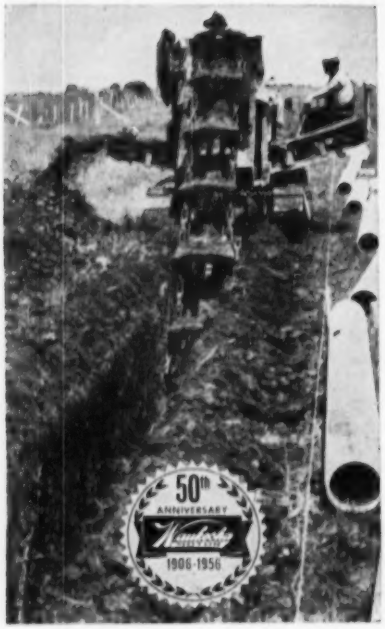

● Compact, low and narrow, this Parsons 155 goes where other trenchers can't. Its Waukesha Dynamic Diesel power unit gives it high capacity for digging, 16 to 26 inches wide—8 feet deep. You get 30 digging speeds (60 optional) from 5.8 inches up to 25 lineal feet per minute. At low range Trenchliner inches its way past cross pipes, through rock and other underground obstructions. At high range it makes the maximum feet-per-minute cross country. The Waukesha 195-DLCU Diesel is a 6-cyl., 302 cu. in., 4 x 4-in. power plant—prompt to start, quick to respond, economical to run, ruggedly reliable. Get Bulletin 1625.

WAUKESHA MOTOR COMPANY
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New York • Tulsa • Los Angeles

320

turns in ducts, are contained in 4-page catalog F7912. Tabulated pressure-loss data for duct corners equipped with the device show the pressure drops (inches of water) that occur with various combinations of duct aspect ratio (width/-heights) and air velocity. Also included are illustrated installation instructions. BARBER-COLEMAN CO, ROCKFORD, ILL.

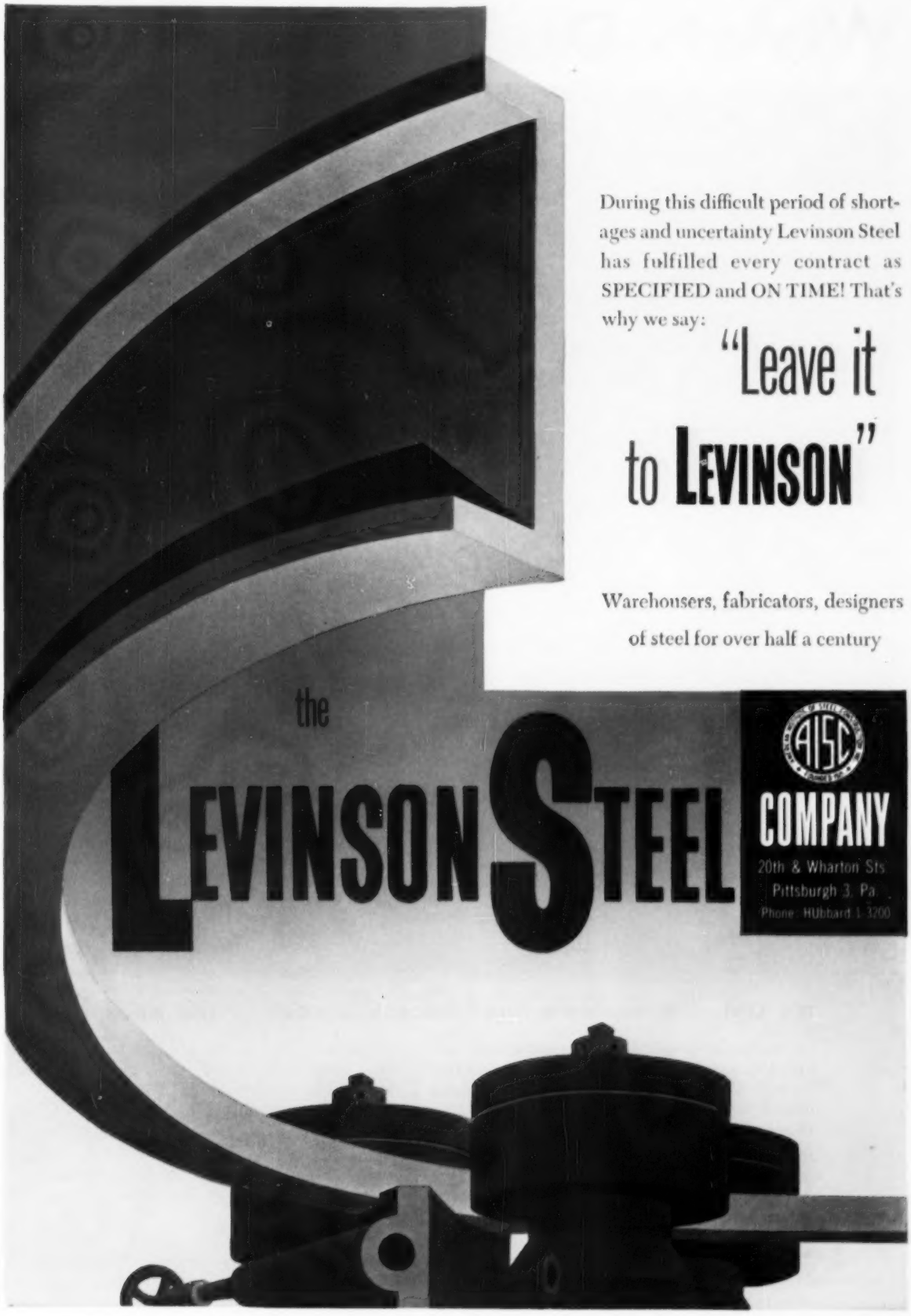
Grinding mills—A 44-page booklet by the Hardinge Co. describes its line of mills for dry grinding and pulverizing. The booklet contains information on all types of dry mills, their application and selection. It also describes various air classifying arrangements and shows a number of plant flow sheets. Information on mill auxiliaries, such as feeders and electronic controls, is also in the booklet. HARDINGE CO., INC., YORK, PA.

Richmond-San Rafael Bridge film—Steel erection techniques are dramatically portrayed in a new 30-min sound and color film. Included is detail of truss erection using an aluminum-truss falsework system (ENR Nov. 4, 1954, p. 33) spans (ENR Oct. 27, 1955, p. 25). The film is obtainable on loan from ROBERT O. VALENTINE, JUDSON PACIFIC-MURPHY CORP., 4300 EASTSHORE HWY., EMERYVILLE 8, CALIF.

Air pollution—A four-page brochure on air pollution control is available, with a description of scientific methods available for the study of the various aspects of air pollution. It includes a discussion of pilot scale research, testing and design; stack emission studies; stack tracer gas studies; and community surveys for ordinance and zoning development. HEMEON ASSOC., 121 MEYRAN AVE., PITTSBURGH, PA.

Tractor-shovels—An eight-page booklet entitled "New Traxcavators for New Profits" details performance factors, such as, stability, bucket capacity, power and speed of Caterpillar's new Traxcavators Nos. 933, 955, and 977. Also illustrated are attachments available for these units. Form 32024, CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS.

Motor grader—16-page booklet on the Galion Model T-600 has been released by the manufacturer. The catalog gives pictures and descriptions of the torque converter drive, power shift transmission, control panel and many other features of design and construction. Available attachments are also listed and illustrated. THE GALION IRON WORKS AND MFG. CO., GALION, OHIO.



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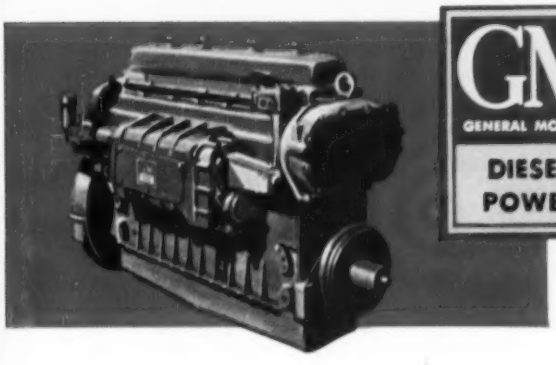
And now winning the acclaim of users who want higher output are Detroit Diesel's great new Turbopower engines. *These new GM Turbopower Diesels develop up to 17% more power on no more fuel—or the same power with 15% less fuel!*

Because of greater efficiency, and the fact they fit where bulkier engines won't, GM Detroit Diesel engines are installed by over 150 manufacturers in more than 1,000 different applications of power machinery. They step up output and cut fuel and maintenance bills on any job from 30 h.p. up.

You'll find it always pays to specify GM Diesel in the equipment you buy or repower. It's America's FIRST CHOICE Diesel *because it does more work at less cost!*

Servant" Number one?

Illustrated above are Adams motor grader; Warner-Swasey Gradall; Pettibone-Mulliken Speedall; Four Wheel Drive truck; Seaman-Andwall Trav-L-Plant. Write for list of over 1,000 applications.



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WE MAY MOVE HOUSES BY AIR!

Many incredible changes in the world of tomorrow. But even then, our water and gas will still be carried by that dependable public servant—the cast iron pipe being laid today.

Records show that cast iron mains installed over a hundred years ago are still serving effectively for more than seventy American water and gas utilities. Moreover, the modernized cast iron pipe of today . . . centrifugally cast and quality controlled . . . is even stronger, tougher, more serviceable.

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Mason G. Lockwood—

"For a country boy who just fell off a load of hay, I have a rather awesome undertaking ahead of me."

New President Of ASCE Takes Stock

Mason Graves Lockwood assumed presidency of the American Society of Civil Engineers in Pittsburgh last week with the makings of a program for the society's improvement in his hands.

His inaugural address, delivered last Wednesday morning, was a report to the membership on results of a personally conducted letter survey by which as president-elect he had sought in recent weeks to probe ASCE's weaknesses and establish remedies for these weaknesses.

Response to this unusual, perhaps unique, appeal for guidance was "overwhelming." The next president of ASCE found those who received his questions—presidents and secretaries of local sections of the society—ready and willing with the answers. Much of what they told him went into his inaugural address, along with his assurance that he aims to have implemented the worthy and feasible remedies for ills commended to his attention.

What are ASCE's weaknesses, according to its local level leadership, and what do they recommend be done about them?

• **Junior membership**—About 45% of respondents representing 90% of ASCE's membership told Mason Lockwood of dissatisfaction with the Junior membership grade. "Clearly there is widespread dissatisfaction with the Junior classification of membership," reported the new president. Most of the dissatisfaction, strongest agitation for elimination of the "degrading classification," came to him from those beyond the grade of Junior.

• **Economic betterment**—Some 37% of his responding constituents discussed some aspect of pay or professionalism for the benefit of their president-to-be.

"Rather large numbers of our members believe aspirations for economic betterment not altogether incompatible with professionalism for engineers," said the Lockwood inaugural address.

He reported the expressed concern over relatively low salaries being paid to engineers in the 5- to 15-year experience bracket. And he reported a great many of his constituents ready to sacrifice ASCE's present tax status for the legal latitude in which to work more effectively toward economic and professional betterment. Actually, said the new president, ASCE at present is not restrained from much it could do on legislative matters.

Lockwood pointed out that a new society committee, a task committee on economic advancement, was constituted by the ASCE board within the past year to approach and explore this general problem.

• **Communications, public relations**—Replies from 37% stressed disturbance by a weakness they see in the society's efforts at disemminating information. "Many feel," said Lockwood, "that the society actually is doing much more for its members than the members realize and that this situation is due to faulty communications and deficient public relations."

As a communications remedy, some recommended brief periodic letters to the members dealing with significant matters individually.

The public relations matter was related by respondents to other weaknesses they mentioned: professionalism, pay, prestige, and public understanding.

• **Apathy among members**—For this often-mentioned weakness, the sug-

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Contains check lists of job specifications, conditions and equipment. Lists current technical data and useful tables . . . illustrates placing methods and shows how unusual jobs were solved.

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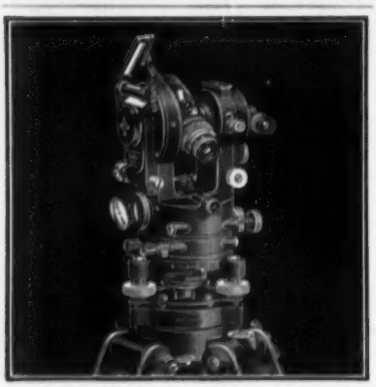

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gested remedy was vitamins at the grassroots, local section level.

Better liaison between local and national levels, more positive action toward unity in the engineering profession and decentralization of power in the society's affairs, were among other major prescriptions offered to alleviate the ills alleged to be weakening the society.

Mason Lockwood was quick to establish in his speech last week that his survey intentionally took a negative approach—asked not for expressions on the ASCE's strengths but only its weaknesses. "I have explored the negative solely in looking to its elimination," he stated.

What does he intend to do about the reported defects?

"I expect . . . to seek the authority and cooperation of the Board of Direction in making available . . . contents of these earnest, thought-provoking letters . . . with the aim of neither burying nor praising the recommendations."

• **"Off a load of hay"**—Fifty-three-year-old Lockwood is 104-year-old ASCE's first president from the state of Texas. He may also be the only electrical engineering graduate to head the nation's 40,000-member civil engineering organization.

Water-boy, mule-skinner and construction enthusiast as a youngster, he was diverted from civil to electrical studies at Rice Institute after three years at Austin College. He could afford the two years further schooling needed for a B.S. in electrical engineering but not the three years that were between him and a civil engineering degree.

From a first job in transmission-line construction to an electrical superintendent's position on power-plant construction, he rose to become office manager of the engineering department for Houston Lighting & Power Company.

Eight years later he resigned to enter consulting practice. In 1935, it was Dowdell, Andrews & Lockwood. Today it is Lockwood Andrews & Newman of Houston, with offices also in Corpus Christie and Victoria, Tex. The 75-man organization works in industrial and public works, mostly in Texas and the Southwest.

Mason Lockwood has been president of ASCE Texas Section. He is also a past president of the Texas Society of Professional Engineers.

Now he heads ASCE. And having polled a sample of his constituency for their views he titled his inaugural address last week: "Forty Thousand Heads Are Better Than One."

Brig. Gen. M. M. Dawson Heads New Westinghouse Department

Brig. Gen. Miles M. Dawson, recently retired from the Army, has been named manager of Westinghouse's newly organized distribution services department.

General Dawson's duties will primarily involve problems of field storage of finished products and improvements on their transportation to market.

A graduate of West Point, he also received a degree in civil engineering at Cornell in 1927.

During his 31 years of active service, General Dawson served in several capacities with the Corps of Engineers. In World War II he was assigned to the Office of Chief of Engineers in Washington, and later transferred to General MacArthur's staff in the Pacific area.

From 1950 to 1953 he was commander of the Japan Engineer Depot at Yokohama.

Men and Jobs Briefs . . .

• **Associations**—The Architectural Terra Cotta Institute, national association of manufacturers of terracotta reelects **George H. Berry III** as president. . . . **John F. Austin Jr.**, president of the T. J. Bettes Company, Houston, Tex., is elected president of the Mortgage Bankers Association of America.

• **Careers**—The city of Erie, Pa., appoints **Paul Cygan** as superintendent of its new $5-million sewage treatment plant. He was formerly associated with Chester Engineers in Pittsburgh, Pa. . . . **Harold L. Aitken**, former executive assistant administrator for the Federal Civil Defense Administration, is named engineer in charge of the newly opened Washington office of the Clarkeson Engineering Company of Boston, Mass.

Harold E. Miller, executive officer of the San Diego Regional Water Pollution Control Board, resigned effective Oct. 1. . . . Governor Herter of Mass., appoints **Carl A. Sheridan** of Framingham, Mass. to succeed John A. Volpe as the state's commissioner of public works.

• **Business**—Kaiser Engineers, a division of the Henry J. Kaiser Company appoints **David H. Wheeler** as Air Pollution Control Engineer with headquarters at Oakland, Calif. . . . **Mason C. Prichard** returns to the Oman Construction Co. of Nashville, Tenn., as vice president. Prichard, for the last two years was executive vice president of The Foundation Co. of New York City.

Albert Weiner and **Harry R. Libner** are promoted to associates and directors of the Chicago hydroelectric consulting firm of Erik Floor & Associates. Weiner will continue as the firm's chief structural engineer. Libner is named to the newly created position of chief planning engineer. . . . The Raymond Concrete Pile Company appoints **William A. Cunningham** as Philadelphia district manager. . . . **George H. Parker** of Bethlehem, Pa., is named manager of the Luria Engineering Company's steel fabricating plant being constructed at Chicago Heights, Ill.

R. Latimer Smith is appointed director of research for the Concrete Service Company, manufactiurers of concrete specialties in Philadelphia, Pa. . . . **Chester W. Cambell** is named president of The Foundation Company located in New York City replacing the late Clarence McDonough.

• **Awards**—The Air Force awards to **John M. Ferry,** special assistant for installations, the Exceptional Civilian Service Award for his supervision of a construction program totaling more than a $1-billion including airbases in Spain and the Air Academy.

• **Retirements—Robert S. Calland,** assistant regional director of the Sacramento Region II, Bureau of Reclamation, after more than 33 years of government service . . . **Robert L. Brown,** road maintenance supervisor of Mecklenburg County for the North Carolina Highway Department, after more than 35 years of public service.

Obituaries

William Joseph Stanton, 82, a retired civil engineer, died Oct. 3 in Kensington, Md. Stanton, a native of New York, made his career as a civil engineer with the Corps of Engineers. He spent most of his time in Philadelphia, where he specialized in river and harbor engineering until his retirement some 20 years ago.

Adolphus H. Brown, 64, chief of the construction division in the Jacksonville, Fla., district, Corps of Engineers, died on Oct. 7. He had been with the Corps nearly 30 years and with the Jacksonville district for 25 years.

Clayton E. Strausser, 64, director of the Pennsylvania State Bureau of Engineering and Construction, died Oct. 9 at Reading, Pa. A civil engineer, he had been supervising engineer on a number of federal projects.

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- *for low cost treatment of domestic sewage and industrial wastes*
- *ideal for small communities . . . subdivisions . . . motels . . . resorts . . . schools . . . industrial plants*

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5. Aeration periods are shorter . . . approximately four hours. This means smaller aeration tanks can be used . . . another feature which contributes to lower first costs.
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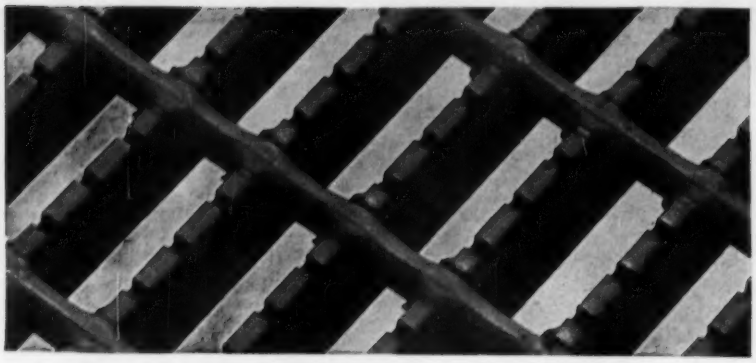

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Books

The Too-Heavy Federal Hand

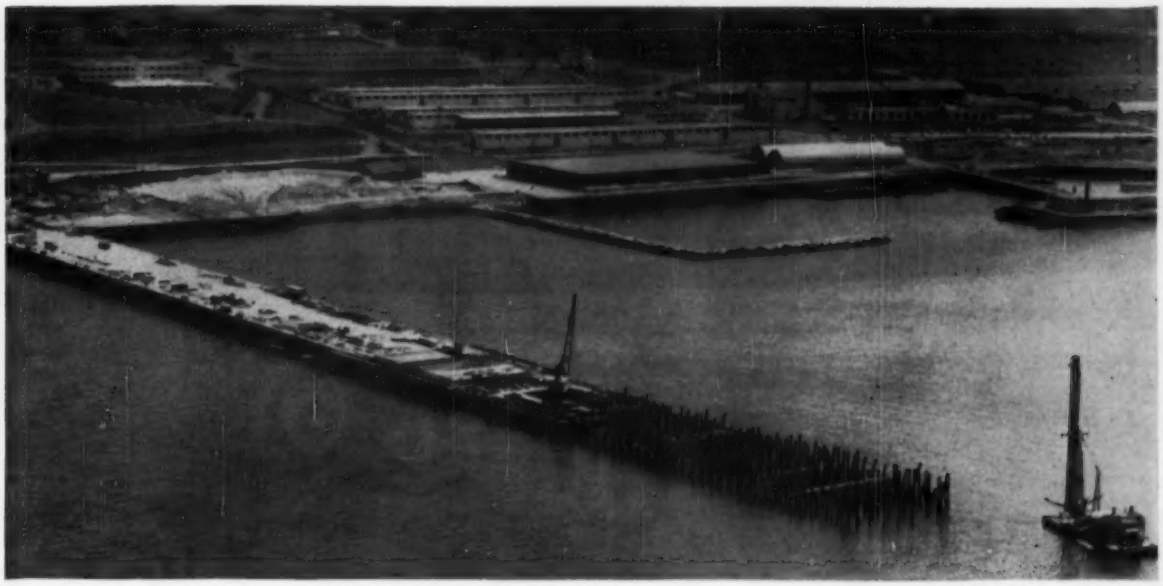
OUR NATION'S WATER RESOURCES—POLICIES AND POLITICS—by Ben Morcell. 266 pp. The Law School, University of Chicago, Chicago. $3.50

The Chairman of the Second Hoover Commission's Task Force on Water Resources and Power sets down his views in water resource policy in characteristically frank, often pungent, language. There is no mistaking on which side of the fence Ben Morcell stands. He is for developing the nation's water resources only as needed to meet proven economic requirements, having beneficiaries of projects pay the entire cost on a strictly business basis, placing financing and administration in the hands of private enterprise or local or state governmental units, and keeping the federal government in the picture only when national defense or interstate and foreign commerce are clearly involved.

Specifically, the wartime chief of the Bureau of Yards and Docks and present board chairman of Jones & Laughlin Steel Corp., would require beneficiaries from flood control and irrigation projects to pay 50% of the project costs (including interest) as an immediate step toward assumption of all costs. He would make the Federal Power Commission responsible for regulation of accounting and rates of federal projects. And he would get the federal government—and particularly TVA—out of the power business by selling or leasing all public power activities. Finally Admiral Morcell favors establishing a water resources board in the White House, coordinate the 43 federal agencies presently concerned with water resources.

The book consists of a series of lectures given at the University of Chicago during April and May 1956. Most of the book is devoted to an unusually instructive review of the beginnings and growth of the federal role in water resources development, breaking down into an evaluation of the agencies involved and their accomplishments in navigation, flood control, irrigation and power. He is especially critical of TVA and the recently started Upper Colorado River project. On navigation, he feels too much money has been spent for projects of very limited or non-existent national value. He challenges any contention that irrigation pays its way. State—and municipal—owned power production are classed as only slightly less repugnant than federal generation.

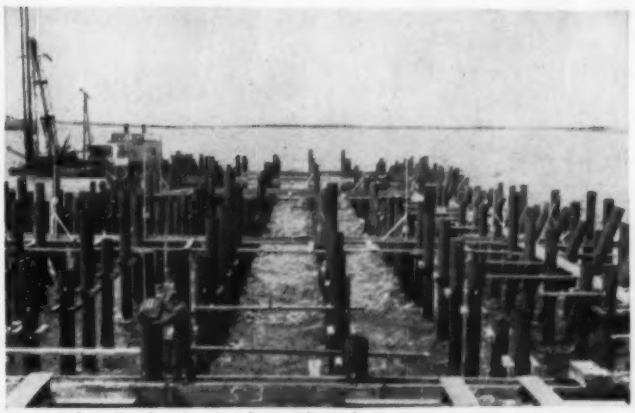
Agree or not with the author, readers will find him forthright, stimulating and uncommonly knowledgable in his subject.



Monotube Piles provide

STABILITY

for new Navy Berthing Pier



Monotube piles for the 100 feet wide and 1,350 feet long U. S. Navy Berthing Pier at Newport, R. I.

PILE DATA

TYPE—MONOTUBE

DIAMETER—16 INCH

GAGE—3

NUMBER OF PILES—1638

LENGTH—50 TO 110 FEET

LOADING—50 TONS

DISTANCE FROM MUD LINE TO PILE CUT-OFF } **APPROX. 30 FEET**

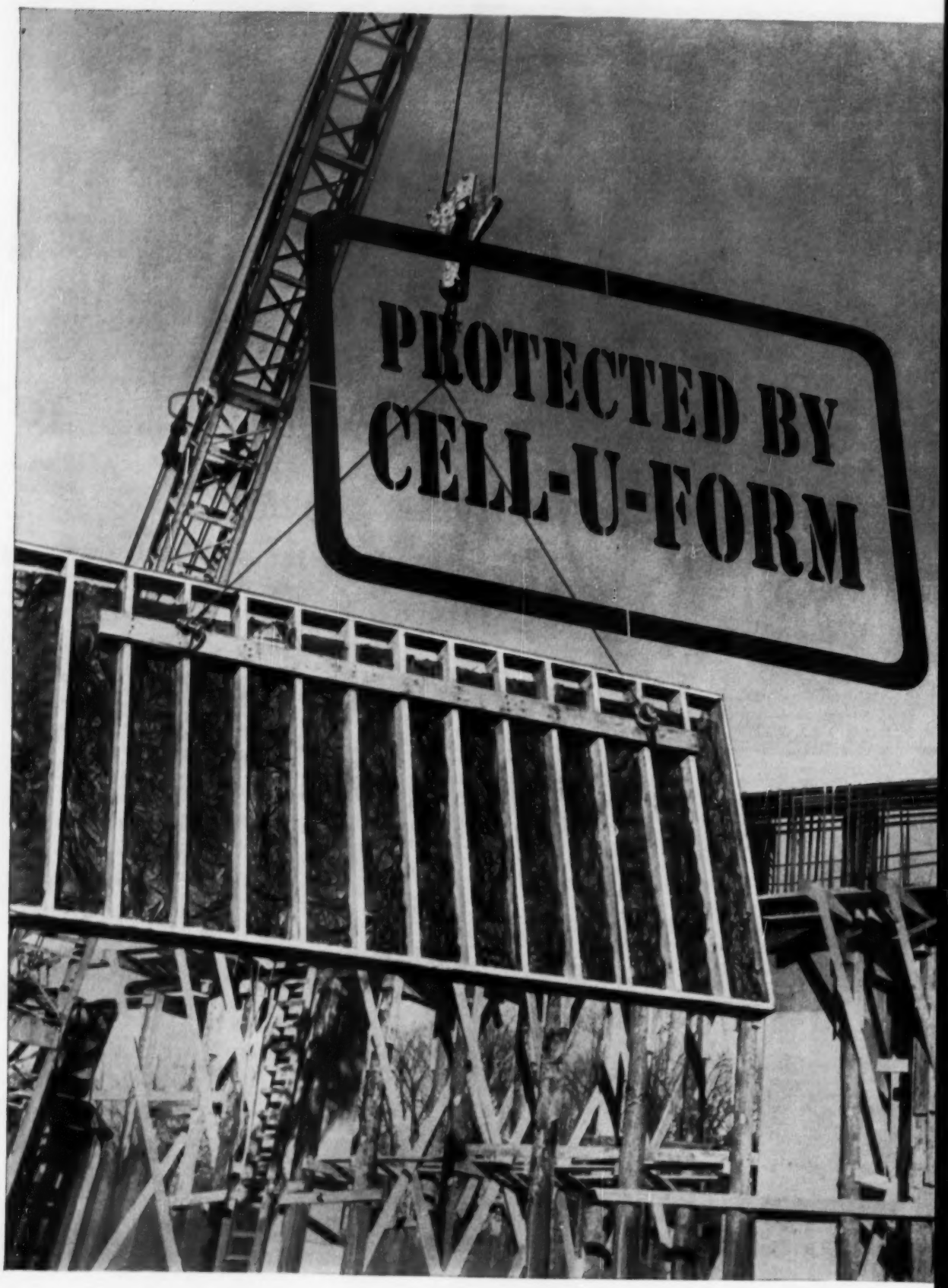
DESIGN: BUREAU OF YARDS & DOCKS, U. S. NAVY

CONTRACTOR: RAYMOND CONCRETE PILE COMPANY

50 FIFTIETH ANNIVERSARY 1906 1956

UNION METAL

Monotube Foundation Piles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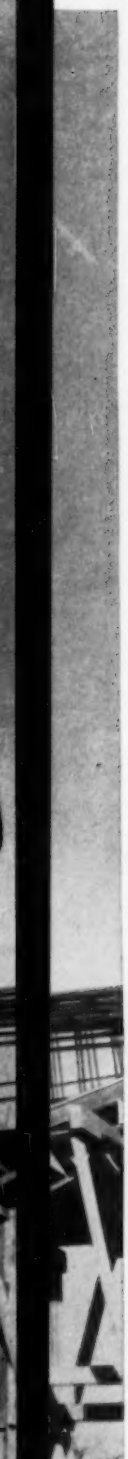

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It's a new improved rugged blanket insulation—job-proven—to protect concrete construction and assure correct curing during cold weather.

WHY is its use growing so fast?

Cell-U-Form insulation for winter concreting generally eliminates the need for tarpaulin enclosures, fuel and watchmen. It ends the fire hazard always present when heaters are used. Engineers estimate that the cost of using such form insulation is about *half* that of installing heated enclosures.

WHY is it better than ever?

Successful from the outset, Cell-U-Form has been constantly improved by Wood Conversion Company engineers. Today, it has even greater ruggedness—heavier liners that better withstand rough handling on the job and exposure to weather.

WHO USES CELL-U-FORM?

Here are some of the important contractors and projects for which Cell-U-Form* has fully demonstrated its greater efficiency and lower cost in protecting concrete during cold weather:

CONTRACTOR AND LOCATION	PROJECT
Berke Moore Co., Inc., Boston, Mass.	Massachusetts Turnpike Bridges at Chelsea, Mass. & Revere Beach Parkway Reconstruction in Everett, Mass.
Bonesteel and Hyde, Pierre, S. Dak.	Bad River Bridge at Pierre, S. Dak.
Chapin & Chapin, Inc., Norwalk, O.	Indiana Toll Road Project Bridges
Fegles Construction Company, Minneapolis, Minn.	Minnesota State Fair Hippodrome Building
Felmley-Dickerson Co., Bloomington, Ill.	Chanute Air Force Jet Testing Cells at Rantoul, Ill. & University of Illinois Home Economics Bldg. at Urbana
Fenix & Scisson, Inc., Tulsa, Okla.	Waterworks Project in Tulsa, Okla.
S. J. Groves & Sons, Minneapolis, Minn.	Indiana Toll Road Bridges
W. H. Hinman, Inc., Waterville, Me.	Maine Turnpike Bridges
Guy H. James Construction Co., Oklahoma City, Okla.	Chamberlain Bridge, S. Dak. & Kansas City Water Plant Intake Structure in N. Kansas City, Mo.
Kingston Construction Co., West Point, Pa.	Pennsylvania Turnpike Bridge
Lipsett, Inc., New York City, N. Y.	Pennsylvania Turnpike Bridges
McCann Construction Company, Inc., Springfield, Ill.	Beardstown, Ill., Bridge
Merritt-Chapman-Scott, New York City, N. Y.	Mackinac Straits Bridge
Paschen Construction Co., Chicago, Ill.	Indiana Toll Road Bridges
B. Perini & Sons, Framingham, Mass.	Massachusetts Turnpike Bridge
Edmund J. Rappoli Co., Inc., Cambridge, Mass.	The Boston Nursery for Blind Babies, Jamaica Plains, Mass.
Ruckman-Hanson, Inc., Ft. Wayne, Ind.	Indiana Toll Road Bridges
Sioux Falls Construction Co., Sioux Falls, S. Dak.	McKennon Hospital Addition, Sioux Falls, S. Dak.
James Steele Construction Company, St. Paul, Minn.	Warehouse Building
E. D. Swett, Inc., Winchester, N. H.	New Hampshire Turnpike Bridges
Union Building & Construction Corp., Passaic, N. J.	Indiana Toll Road Bridges and Culverts

*Formerly sold as Balsam-Wool Insulations for Concrete Forms.

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COLD WEATHER
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Without any obligation on my part, please have your fieldman give experience and test data on Cell-U-Form insulated forms.

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Company.....

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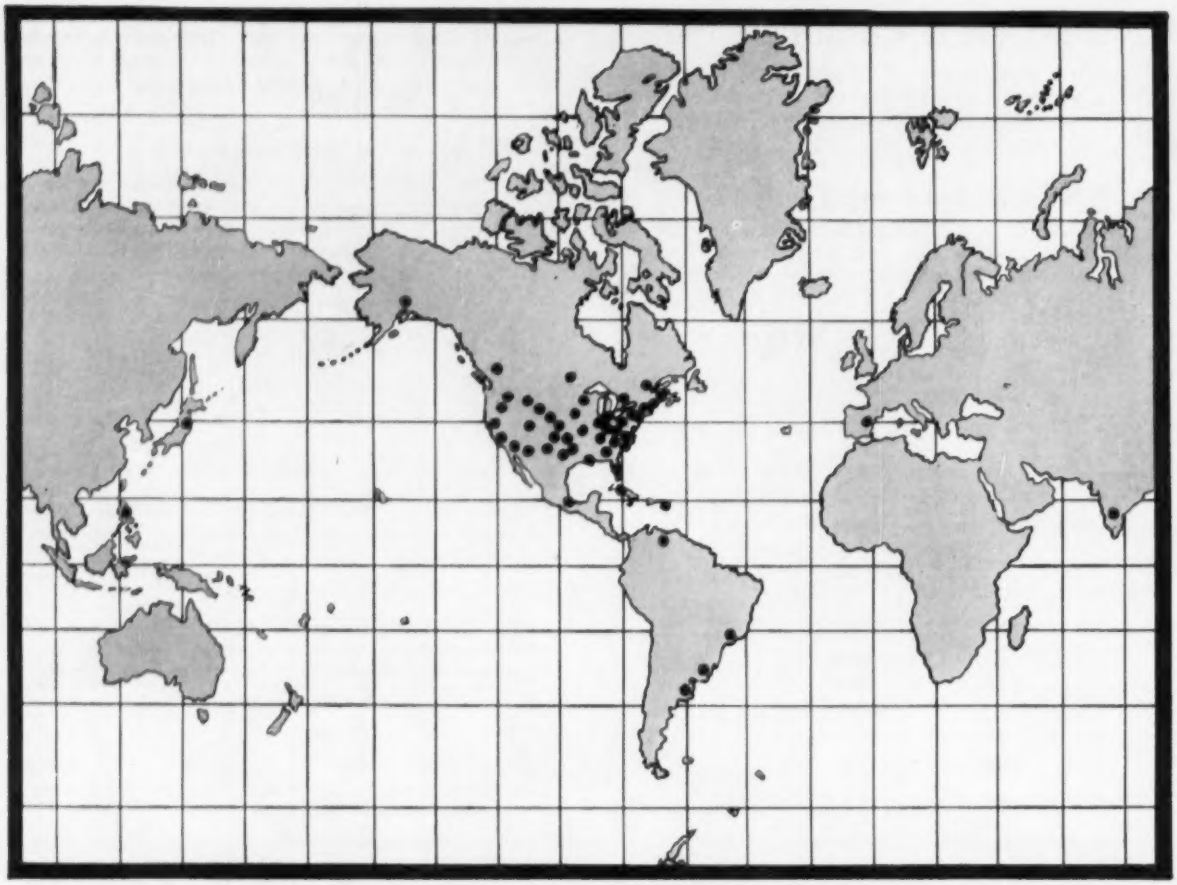

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. . . of Exceptionally High Thermal Efficiency
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RIC-WIL INCORPORATED — PREFABRICATED INSULATED PIPING SYSTEMS

BARBERTON, OHIO

IN CANADA: THE RIC-WIL COMPANY OF CANADA LIMITED

With 11 men, two dump trucks plus the equipment shown here, a contractor is stabilizing 4,000-to-5,000 sq yd every eight hours, in the placement of . . .

Soil Cement at a Dollar a Yard

Fast, economical, and practical construction of a 13-acre parking lot for a Massapequa Park (L. I., N. Y.) shopping center is being achieved through what is claimed to be the largest soil-cement operation in the East.

A total of 2,870 tons of portland cement (15,000 bbl) is being churned into the hydraulic-fill area at the rate of 4000-to-5,000 sq yd per day, and at a cost of less than $1.00 per sq yd of finished surface. The entire job is being done by George B. Clark & Sons, Inc. with 9 pieces of equipment and 11 men.

• **Equipment**—The equipment used consists of one standard patrol grader, one single-pass stabilizer, a 10-ton oscillating wheel roller, two water trucks, three 6-yd dump trucks, and a quick hitch spreader.

• **Procedure**—Prior to the start of the soil-cement operations, the area had been rough graded. Because the earth was almost entirely sand, use of wheeled vehicles was out of the question. To correct this condition, the contractor spread 1½ in. of loam over the area,

1. Six-yard dump which fills spreader with cement also tows it around while keeping it full.

2. Single-pass stabilizer mixes cement to a depth of 6 in. Water supply truck is moved ahead by pusher bar.

3. Nine-wheel, 10-ton roller follows stabilizer. By rolling before grading, moisture is better contained.

4. Standard patrol grader takes off high spots between rollings. Roller makes four passes, grader three.

ALL STAGES of operation at a glance. Stabilizer moves on to area spread with cement (1), after mixing center strip (2). Adjacent ribbon (3) awaits roller, while grader makes pass over rolled section at left (4).

and used a patrol grader for the fine grading. The dump trucks are filled at a nearby freight yard by a "bazooka" or screw loader. On arrival at the site, a truck is backed into the spreader for a quick hitch. Raising the dump body keeps the spreader full as the truck moves towing the spreader behind it. When the truck is empty, it is unhitched and replaced by a full one. In this manner the spreading becomes an almost continuous operation.

In the wake of the spreader comes the stabilizer. The business end of the machine consists of three sets of revolving blades housed beneath a single cover. The first set of blades scarifies the earth to a minimum depth of six inches and does some mixing. The paddle blades, immediately behind, pick up the loose earth and cement, mix and whirl them through a water spray. The final blades complete the mixing operation and level the treated areas. Water for the dampening operation is carried by a 1,000-gal truck attached to and moved ahead of the stabilizer by means of a pusher bar. At the start of the job, the water truck was driven alongside the stabilizer but after differences in speed had resulted in several broken hoses, the pusher bar method was adopted. Water flow rate is carefully controlled on the basis of physical observation of the treated area. The more fines, the less water.

Behind the stabilizer come the roller and the grader in alternate passes, with the roller coming first. According to project engineer Richard Olton, use of the grader before rolling resulted in excessive evaporation of the water and necessitated additional intermediate wetting. When the roller preceded the grader (which does not churn the ground but merely removes the high-spots) the moisture is better contained, no intermediate dampening is needed.

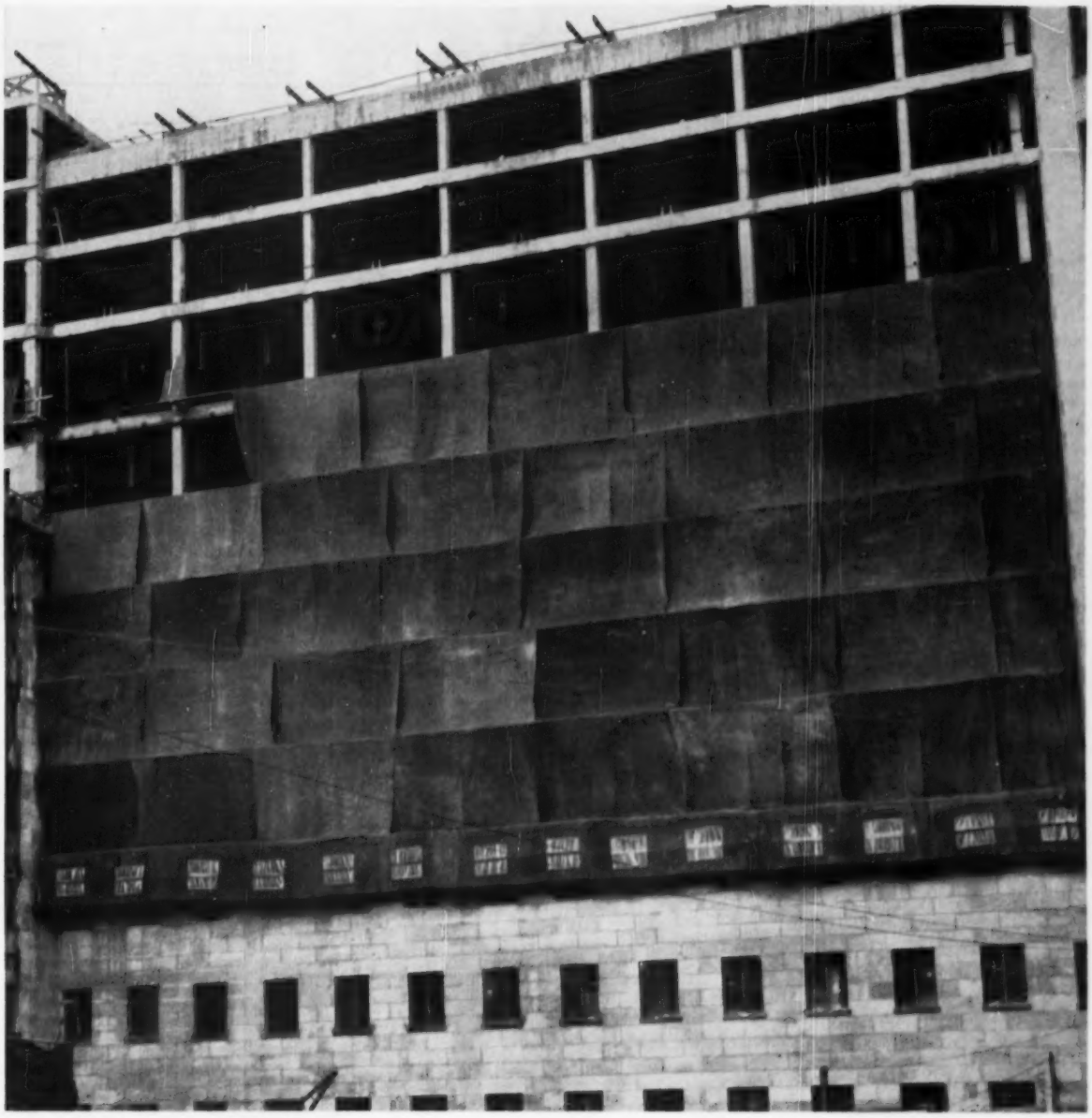
The roller makes four passes and the grader three. A secondary water wagon gives the area dampening spray before the final rolling completes the soil-cement operation. At a later date the stabilized area will be sprayed with RC-2 asphalt at the rate of .3-to-.4 gal per sq yd and covered with ¼-in. stone spread at 30-to-35 lb per sq yd.

Training-in-Service Program To Relieve Engineer Shortage

A training-in-service program designed to relieve the shortage of qualified engineers available for Montana's expanding highway program has been initiated at Helena. According to Highway Engineer Scott P. Hart, "It is felt that there are now in our employment persons who have not had the benefit of formal engineering education, but who, through self-improvement programs and practical experience are capable of doing work of higher degree than their present or past assignments."

To this end the Montana State Highway Commission has set up a course of instruction in seven basic engineering subjects that calls for an initial participation by 50 men of sub-professional status from the headquarters office. After evaluation, the course will include all state highway districts.

Trainees will be given frequent examinations and will be able to advance on the basis of qualification.



UNDERCOVER PROJECT – During the construction of this mammoth $14,000,000 building – soon to be occupied by the University of Pittsburgh Schools of the Health Professions – a great deal of work was carried on in severe winter weather and over several sections of the building at one time. In order to maintain uninterrupted construction schedules, Ragnar Benson, Inc., General Contractors, utilized a considerable number of these large protective tarps made of Mount Vernon canvas. At one time, nearly 500 giant tarps were simultaneously in use to protect workmen, masonry and freshly set limestone facing from the ravages of the weather. Tarps manufactured by Pittsburgh Waterproof Company.

This is another example of how fabrics made by Mount Vernon Mills, Inc. and the industries they serve, are serving America. Mount Vernon engineers and its laboratory facilities are available to help you in the development of any new fabric or in the application of those already available.

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An Offer and Acceptance Needed to Form Contract

In order "to constitute a valid binding contract, the proposal of the one party must be met by an unqualified acceptance by the other party and the acceptance must correspond entirely with the essential terms contained in the proposal. A qualified or conditional acceptance containing terms and conditions not found in the original proposal may operate as a counter-offer but does not constitute an acceptance and does not result in the formation of a valid contract binding upon the parties."[2]

"It is a fundamental rule of contracts that to constitute a contract by offer and acceptance, the acceptance must conform exactly with the offer, and a letter written in reply to an offer, which restates the terms of the offer with some variations, though slight, cannot be regarded as a consummation of the contract. Snow v. Schulman, 352 Ill. 63, 185 N.E. 262. An acceptance must conform exactly to the offer. If it contains new conditions, there is no contract Brach v. Matteson, 298 Ill. 387, 392, 131 N.E. 804."[2]

(1) Carlin v. City of Newark, 114 A. 2d 761, Supreme Court of New Jersey, Law Division, May 27, 1955.
(2) Valdez v. Viking Athletic Association, 110 Ill. 2d 680, 681, Appellate Court of Illinois, 1953.

Liability for Damages After Abandoning Job

If a subcontractor starts a job and then refuses to finish it, how much should he be paid? How are the damages sustained by the prime contractor measured?

A case which posed these questions came before a District of Columbia court under the following circumstances:

A subcontractor abandoned a job and refused to complete it. The prime contractor then engaged another subcontractor whose contract price was higher than that of the original subcontractor.

In a damage suit against the first subcontractor, the prime contractor claimed as damages the difference between the amount of the original subcontract and the actual cost of completing the work.

The trial court allowed the prime contractor the damages he claimed, less the fair and reasonable value of the work done and the materials furnished by the original subcontractor.

Both parties appealed the decision and the appellate court held[1] that the judgment of the trial court, which provided for compensating the sub for the work he had performed up to the time he abandoned the job, was unfair because it did not compensate the prime contractor for the damages he had sustained as a result of the breach of contract by the subcontractor. The prime contractor was granted a judgment for the difference between what it actually had cost to perform the work and the amount of the original subcontract.

While not mentioned in the opinion, it is apparent that the difference in the amounts of both subcontracts exceeded the fair and reasonable value of the work performed by the original subcontractor up to the time he abandoned the job so that he was not entitled to compensation for the work performed up to the time he abandoned the work.

(1) Bainum v. McGrady, 117 A. 2d 462, Municipal Court of Appeals for the District of Columbia, Nov. 4, 1955.

How Much Time Is Allowed For Contract Performance

Where a contract fails to stipulate a time for its performance, a reasonable time for performance is implied by law. What constitutes a reasonable time depends upon the facts and circumstances existing at the time the contract was entered into.[1]

In order to determine what constitutes a reasonable time, the court should allow the parties to testify as to conversations had before the agreement was signed.

In a New York case, such testimony was not allowed by the trial court on the ground that it tended to vary the terms of the written agreement. The appellate court held the ruling to be erroneous because it was not offered to vary the terms of the written contract but to show what the situation was when the parties entered into the contract and to determine what was a reasonable time for the performance of the contract.

(1) Steinman v. Olafson, 149 N.Y.S. 2d 31, Supreme Court, Appellate Term, Second Dept., Dec. 22, 1955.

Contract May Be Rescinded Because of Fraud or Deceit

"Fraud, misrepresentation or overreaching may invalidate or vary a written contract and oral proof of such acts is not barred by the parol evidence rule."[1]

An interesting and very unusual example of the application of this principle appeared in a case[2] where the construction of a sewer was involved. When the work was being performed, the contractor discovered that the entire site of the work was underlaid with a compacted mass of large broken rocks which greatly increased the cost of doing the work. After the work was completed and the contractor had been paid in full, he learned that the municipality for which the work was being done had placed the rocks under the site of the work many years previously and had failed to disclose this fact to the contractor at the time bids were asked for the work. The invitation to bidders indicated that the materials to be encountered would be earth.

Upon getting this information, the contractor brought an action to rescind the contract on the ground that the city had misrepresented the conditions that would be encountered in the performance of the work. He sought to recover the difference between the actual cost of performing the work and the contract price, and obtained a recovery.

(1) Esso Standard Oil Co. v. Cunningham, 114 A. 2d 380.
(2) Nordone Contracting Co., Inc. v. City of New York, 269 App. Div. 1035, 59 N.Y.S. 2d 256, affirmed 295 N.Y. 985, 68 N.E. 2d 61.

Late Performance Justifies Cancellation of a Contract

If a contract is materially breached by one party, the other party may cancel it. Failure to deliver materials within the time specified is a material breach.

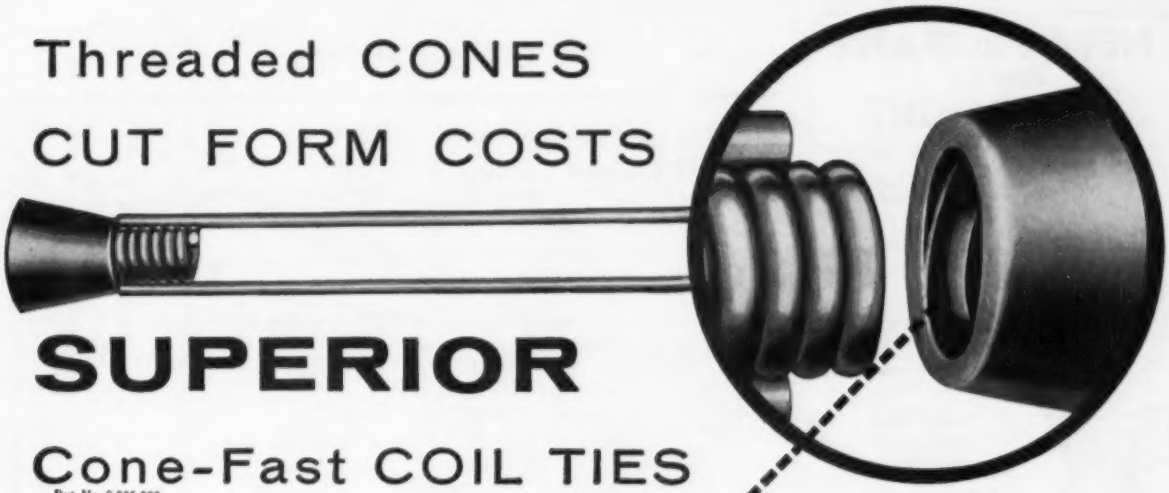
These rules of law were followed in a Maryland case, for example, where a subcontractor agreed to deliver certain material on a specified date. The subcontractor didn't make the delivery and the prime contractor granted a 15-day extension. In doing so, he told the sub that delivery on the extended date was essential to permit the prime contractor to complete the job within the time specified in his contract.

The subcontractor failed to deliver the materials within the extended date and the prime contractor cancelled the subcontract. The subcontractor brought an action to recover damages for breach of contract, but the action was dismissed, the court[1] holding that the failure of the subcontractor to deliver the parts within the specified time was a material breach of contract, justifying prime contractor's cancellation.

(1) Velte v. McBride, 118 A. 2d 640, Court of Appeals of Maryland, Dec. 5, 1955.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)

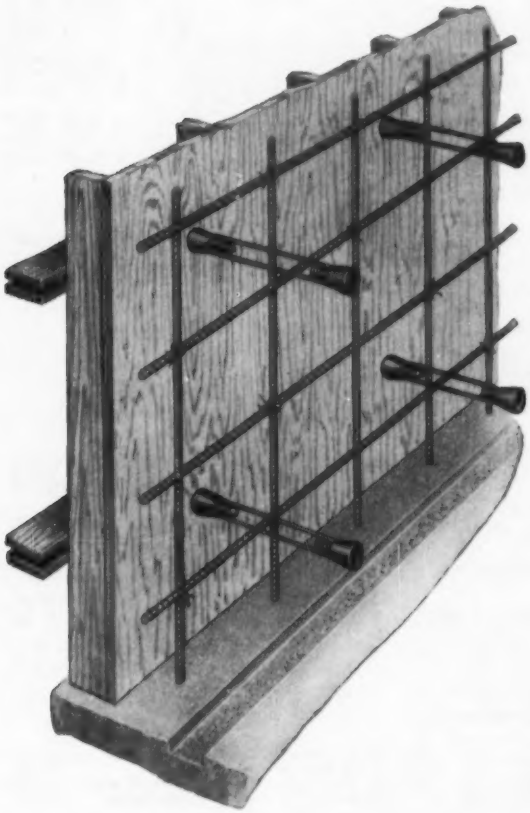
Threaded CONES CUT FORM COSTS



SUPERIOR

Cone-Fast COIL TIES

Pat. No. 2,335,338



May be used with wood, combination wood and steel, and all steel form work for bridge piers and abutments, retaining walls, filtration and sewage disposal plants, and other engineering projects. Illustration above shows assemblies in place prior to erection of opposite form.

***Patented Threaded Cone Permits Extra Fast Erection of Forms!**

Form erection crews can maintain extra fast schedules when using the Superior *Cone-Fast* Coil Tie Assembly because of a patented threaded feature whereby less than 2 turns of the Cone hold it securely to the Coil Tie. Designed especially for jobs where large panel forms are used for thin walls that do not permit a man inside forms, these *Threaded* Cones cannot be knocked off the Coil Ties when the opposing form is being applied. Here's an additional advantage . . . units may be bench assembled with the assurance that they will arrive at the destination point intact! Stripping is easier too . . . as the Threaded Coil Cones back out of the wall with a cone wrench.

Cone-Fast Coil Ties with *Threaded* Coil Cones are supplied for ½" to 1¼" Coil Bolts with safe load capacities from 5,000 to 36,000 lbs. Working parts (Cones and Bolts) are returnable for credit.

When specifications require the tie metal to be 1" or 2" back of the wall face, Superior *Standard* Coil Ties are available.

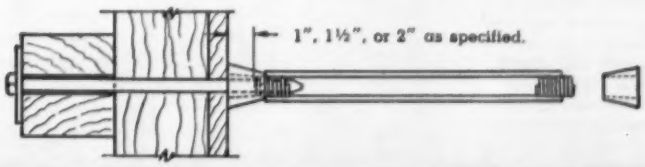
For complete details request a copy of our new Catalog 600.

SUPERIOR CONCRETE ACCESSORIES, INC.

4110 Wrightwood Avenue, Chicago 39, Illinois

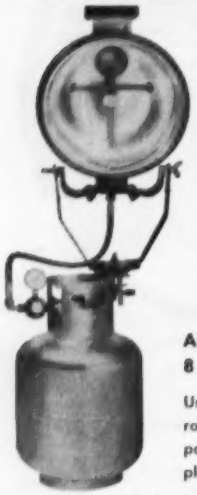
Pacific Coast Plant — 2100 Williams St., San Leandro, Calif.

New York Office — 1775 Broadway, New York 19, N. Y.



SUPERIOR

NEW PROPANE
6000 C.P.
FLOODLIGHT



50-150 hours light on 20 lb. tank of Propane.

Safe, totally weatherized, completely portable.

Adjustable volume of light.

Throws beam about 100 x 250.

Lights instantly with match in −45° temperatures.

Also available on 4 to 8 ft. telescopic stand.

Used by: contractors, railroads, municipalities, parks and industrial plants.

Dealer inquiries invited

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WM. W. LEE and SON
20 EAST JACKSON BLVD.
CHICAGO 4, ILLINOIS

Kinnear Rolling Doors

Kinnear Steel Rolling Doors *introduced the* **single-shaft torsion spring.** It assures *uniform* spring action . . . *uniform* regulation of operating ease from a **single adjustment wheel.** Many other special features make Kinnear your best door buy! Send for catalog!

KINNEAR ROLLING DOORS
Saving Ways in Doorways

The KINNEAR Mfg. Co.

1820-40 Fields Ave., Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.

Unit Prices

$479,779 for Seattle Water Line with Channel Crossing

At a price of $36 per lin ft, Seattle, Washington will build this 2.5-mile water line from Mercer Island across the east channel of Lake Washington. W. E. Parker is City Engineer.

The subaqueous crossing will use 20-in cast iron pipe with ball and socket joint at $46.90 per lin ft. With pipe, trench excavation and backfill plus extra excavation, the channel crossing will take 15.7% of the total cost. Bids on welded 20- and 30-in. steel pipe are taken per wall thickness. These prices range from $16.50 per lin ft for ¼-in. pipe to $190 per lin ft for ⅞-in. pipe. Modified prestressed concrete cylinder pipe drew bids on six classes of 24-in. pipe and three of 30-in. pipe. Prices range from $11.40 to $19.40 per lin ft.

Concrete used in blocking, saddles and supports requires six sacks of cement per cu yd for class 6.0 concrete, five sacks for class 5.00 and four sacks for class 4.

The contract price bid by Harbor Construction Co., Seattle, is 8.9% below the engineer's estimate, but only 0.14% below the second low bid.

Prevailing wage rates include $2.605 to $2.845 for cement workers, $2.87 to $3.07 for iron workers, $3.05 to $3.26 for trenching equipment operators and $3.36 for shovel operators.

In combination with a $1.1 million pipe line, let in March, this project will deliver water to Mercer Island and to the east shore of Lake Washington up to Mercer Island take-off.

The three low of five bidders are:

1C	Harbor Construction Co., Seattle, Wash	$479,779
2	F. Coluccio Construction Co., Inc., Seattle	480,463
3	Harold Kaeser Co., Seattle, Wash	515,342
EE	W. E. Parker, City Engr., Seattle, Wash	528,449

Bids: 7-3-56 Items	Unit	Quantity	Unit Prices 1C	 2
Clear & grubb	ls	job	$5,000	$15,000
Trench, excav, prepare & bkfl for CIP, 20"	lf	1,422	4.25	4.25
steel pipe, 20"	lf	60	5.20	8.00
conc cylinder pipe, 30"	lf	4,475	5.00	2.50
24"	lf	7,387	4.70	2.00
Sand cushion, ip	cy	10	8.00	8.00
Pipe, weld stl, 30", 5/16" plate, support on conc saddles on exist footings, weld field joints, ip	lf	2,050	22.25	27.25
on pile support saddles	lf	377	22.75	34.05
3/8" plate, weld joints	lf	10	120.00	132.05
7/16" plate	lf	40	190.00	208.00
20", 1/4" plate, flanged & weld joints	lf	60	16.50	29.00
CIP, 20", ball & socket jt, cl D for subaqueous cross	lf	1,422	46.90	44.90
CP, cylinder, 24", cl 100	lf	3,395	11.40	11.60
cl 125	lf	406	11.85	12.35
cl 150	lf	743	12.25	12.85
cl 175	lf	1,721	12.70	13.20
cl 200	lf	840	14.60	15.20
cl 225	lf	286	15.40	17.35
30", cl 175	lf	823	19.15	19.95
cl 200	lf	3,315	18.30	19.10
cl 225	lf	583	19.40	20.35
Piles, creosot timber, ip	lf	2,600	2.95	3.45
Pipe, culv, doubl cage, reinf 48" under hy RR jacked in	lf	147	90.00	120.00
under hy, laid in open tr	lf	100	35.00	60.00
Blocking & water stops, conc, cl 4	cy	135	50.00	75.00
Blocking & pile supported conc saddles, cl 5.00	cy	56	110.00	90.00
Saddles & ring gird supp on bri footing, cl 6.0 conc	cy	38	225.00	95.00
Steel, reinf	lb	5,000	0.15	0.20
Column strap assemblies, galv	lb	7,300	0.50	0.75
Asb sheet packing graphited on surf, 1/4"	sf	800	1.70	2.90
MH, pipe, castings, ip	ea	14	340.00	315.00
Blow-offs, cl 250, 6"	ea	1	381.00	530.00
4"	ea	1	310.00	405.00
Blow-off chambers	ea	2	260.00	300.00
CIP, blow off, cl 150, 6"	lf	80	13.50	9.00
4"	lf	15	14.00	10.00
Cocks, corp, 1 1/2 x 2"	ea	5	61.50	87.00
Blow-offs, 2"	ea	3	69.50	116.00
2"	ea	1	111.00	155.00
Air & vacuum valv, one unit	ea	1	445.00	445.00
two unit	ea	1	733.00	745.00
Air valv chamber, 4 x 4'	ea	1	445.00	711.70
4 x 7'	ea	1	549.00	903.80
CIP, vent, cl 150, 4"	lf	12	6.50	12.00
6"	lf	15	7.25	12.00
Air release valv, 3/4"	ea	3	115.00	110.00
chamber	ea	1	240.00	255.00
Air release valv, 3/4"	ea	1	100.00	120.00
Flanged outlet, 8", with gate valve, 8", cl 250	ea	2	380.00	455.00
cl 150	ea	2	300.00	265.00
Special outlets, 8"	ea	6	90.50	85.00
Flanged outlet, 12", with gate valve, cl 150	ea	1	452.00	440.00
and blind flange	ea	1	261.00	280.00
Flang, gate valv, 20", cl 250	ea	2	3,625	2,825
cl 150	ea	1	2,550	1,825
24", cl 175	ea	1	3,112	2,775
Valve chambers, large	ea	4	1,050	903.80
Manhole chamber	ea	1	267.00	350.00
Special chamber	ea	1	337.00	460.00
Excav, extra	cy	1,000	1.50	1.00
rock	cy	100	15.00	2.00
Gravel in trench	cy	1,000	6.50	2.00
Tension test specimens	ea	25	14.50	16.50
RCP culv, 12"	lf	55	5.30	6.00
18"	lf	60	8.00	8.50
Expansion joint, 30"	ea	3	1,750	2,200
Special blow-off, 6", cl 250 & galv insul valv box	ea	1	582.00	650.00
Shackle rods & turnbuckles galv	lb	245	1.50	1.25
Extr depth of trench for channel crossing	lf	1,000	2.80	2.50

Time to complete: 300 working days

Airbase Storm Sewer, Maine

This 3,585-lin ft storm sewer with 30- and 36-in. reinforced concrete pipe at Dow Air Force Base in Bangor, Maine, will cost $69,974. The Corps of Engineers awarded the contract to J. R. Cianchette, Pittsfield, Me., who underbid the engineer's estimate by 20.5% and the second low bid by 8%.

The bidders include

1C	J. R. Cianchette, Pittsfield, Me	$69,974
2	Cianchette Bros., Inc., Pittsfield, Me	75,960
6	The Lane Construction Corp., Meriden, Conn	134,615
EE	Corps of Engineers, New England District	88,371

Bids: 6-27-56 Items	Unit	Quantity	Unit Prices 1C	 2
Excav, trench, rock	cy	50	$20.00	$18.00
RCP, 30", 6-8' deep, ip	lf	1,000	13.00	14.00
8-10' deep	lf	350	15.25	16.50
incl pave replac	lf	850	19.60	20.00
10-12' deep, ip	lf	75	17.20	18.00
incl pave replac	lf	185	22.80	21.00
12-14' incl pave replace	lf	120	24.45	24.00
36", 6-8' deep	lf	460	16.25	17.00
8-10' deep	lf	330	18.35	19.50
10-12' deep	lf	170	19.85	22.00
MH, No. J-18, complete	ea	1	355.00	350.00
J-19, complete	ea	1	420.00	450.00
J-20, complete	ea	1	470.00	500.00
J-21, J-22, J-23, J-25, J-26, J-27, J-28, J-29, J-30	ea	9	435.00	450.00
J-24, complete	ea	1	485.00	600.00
Headwall, complete	ea	1	1,700	3,500
Rock channel lining, ip	sy	45	4.10	5.00
Topsoil, to 4", fertilize & seed	ls	job	1,100	2,500

DON'T COMPROMISE ON DESIGN FREEDOM!

Now, your equipment can be lighter, stronger, tougher—made with economical new Lukens "T-1" steel!

■ The unique qualities of this amazing new material offer you greater design freedom than ever before in a high-strength steel! It has unusual resistance to impact, abrasion and atmospheric corrosion. It's tough and *stays* tough at low temperatures. And it combines these qualities with *triple* the yield strength of ordinary carbon steel! These advantages are changing the design of equipment and machinery in a growing number of industries.

Users like new Lukens "T-1" steel because its strength and toughness mean lighter, more efficient equipment. Because such equipment lasts longer, delivers better overall performance. Because it means lower maintenance and replacement costs.

No wonder this remarkable steel is finding its way into so many new plans. And Lukens "T-1" steel can be had in the widest range of plate sizes available anywhere!

Whether you want specific product information or the best ways to make the most of it, write for 24-page illustrated booklet, **LUKENS "T-1" STEEL**, to Manager, Marketing Service, 848 Lukens Steel Company, Coatesville, Pennsylvania.

Whatever your plans—now's the time to change to . . .

LUKENS "T-1" STEEL

LUKENS

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LUKENS STEEL COMPANY, COATESVILLE, PENNSYLVANIA

Materials and Labor Prices Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Wage Rates, Building Board, Lath, Insulation: Last, Sept. 27; Next, Nov 1
- Cement, Aggregates, Ready-mixed Concrete, Asphalt: Last, Oct 4; Next, Nov 8
- Iron and Steel Products, Pipe: Last, Oct 11; Next, Nov 15
- Wood Products, Glass, Explosives, Chemicals: Last, Oct 18; Next, Nov 22

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION—SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE—LOAD BEARING—SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized or lump
Atlanta	$148.25p	$148.25p	$296.50p	$333.55p	.....	.....	$30.50p	$32.70p	$23.50	$24.50	$.....
Baltimore	203.00	217.00	406.00	485.50	596.00	681.00	36.00dc	41.00dc	33.00	22.00	
Birmingham	135.00p	152.00p		303.00p	376.00p	455.00p	27.00ff	28.00gg	33.35	22.30	26.33
Boston	210.60†	234.00†	421.10†	467.80†	.....	.....	40.00p	44.00p	35.20†	30.00†	.....
Chicago	135.00	145.00	280.00	.....	.....	.....	30.00	32.00	36.00	29.00	.....
Cincinnati	205.00j	225.00j	295.00jdd	213.00j	285.00j	314.00j	45.00j	46.00j	28.50j	24.25i	28.50j
Cleveland	202.50**	215.00**	.....	.....	.....	.....	40.00	42.00	31.00	25.00	.....
Dallas	.....	152.00	.....	.....	.....	.....	25.75	45.00	32.00	31.00	.....
Denver	.....	.....	.....	.....	.....	.....	36.00	47.50	34.00bb	28.00bb	34.00bb
Detroit	218.00	226.00	425.00	.....	620.00	710.00	44.50cc	44.00cc	36.00	32.00	.....
Kansas City	137.50	147.50	270.00	270.00	340.00	400.00	33.00	33.00	32.00	27.50	28.50
Los Angeles	r	r	r	r	r	r	30.50§	.....	34.00	34.00	35.00
Minneapolis	188.00p	210.00p	429.00p	210.00pw	.....	.....	43.00*p	52.50ii	44.50bbr	35.50bbr	47.50bbdr
Montreal	170.00aq	178.00aw	325.00aw	270.00	400.00	.....	42.00	49.00	39.00	22.00	13.75w
New Orleans	186.00	186.00	380.00	380.00	.....	.....	40.00	55.00	44.00	32.00	32.00
New York	158.10h	168.60h	231.70ch	255.20hn	.....	.....	44.00	.....	37.00	35.00	.....
Philadelphia	186.30	186.80	312.70	375.20	.....	.....	30/34	34/40	27.00	25.00	3.17
Pittsburgh	154.00	162.00	292.00	340.00	420.00	495.00	36.00	46.00y	32.00	29.50	2.97m
St. Louis	178.50cc	203.00cc	358.00cc	500.00cc	.....	.....	43.00ai	41.50a	1.00aaa	.80aaa	1.30aa
San Francisco	186.85a*	177.10a*	235.30ddz*	.....	.....	.....	42.50*	42.50*	27.75	27.75	30.50
Seattle	225.00cc	250.00cc	450.00cc	250.00crw	.....	.....	43.00a	55.00a	48.00aAA	38.25AA	3.90mAA
Toronto	138.70	148.90	273.75	222.00f	.....	.....	38.00	68.00	40.00	33.50	31.00

*† F.o.b. yard Roxbury. *a Smooth. *b Per 80 lb. bags. *c 8 x 12 x 12 in.-3 cell. *d Pulverized hot. *e 5%, 10th following month. *f 8 x 8 x 12. *g 5½ x 8 x 12. *h F.o.b. trucks, job site N.Y.C. *j Truck load or over. *k $1.00 discount. *l Red face. *m Per bbl., 180 lb. *n 7¾ x 7¾ x 12. Speed tile. *p Truck lots. *q Provincial and Municipal tax extra. *r Not used because of earthquake danger. *s 2% discount for cash. *t 8½ x 8 x 11¼. *u Tax exempt. *v Sand lime. *w 5 x 8 x 12. *y Stacked. *z Pebble lime price per 80 lb. sack. *aa Price per sack. Lime not sold per ton. *bb LCL. *cc Truck delivery. *dd 8 x 12 x 12. *ee Pebble lime. *ff 80% common. *gg Rough, $40.00 Smooth. *hh Incl. *ii Chi common § F.o.b. yard *** Warehouse delivery. ** F.o.b. plant Stockton.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

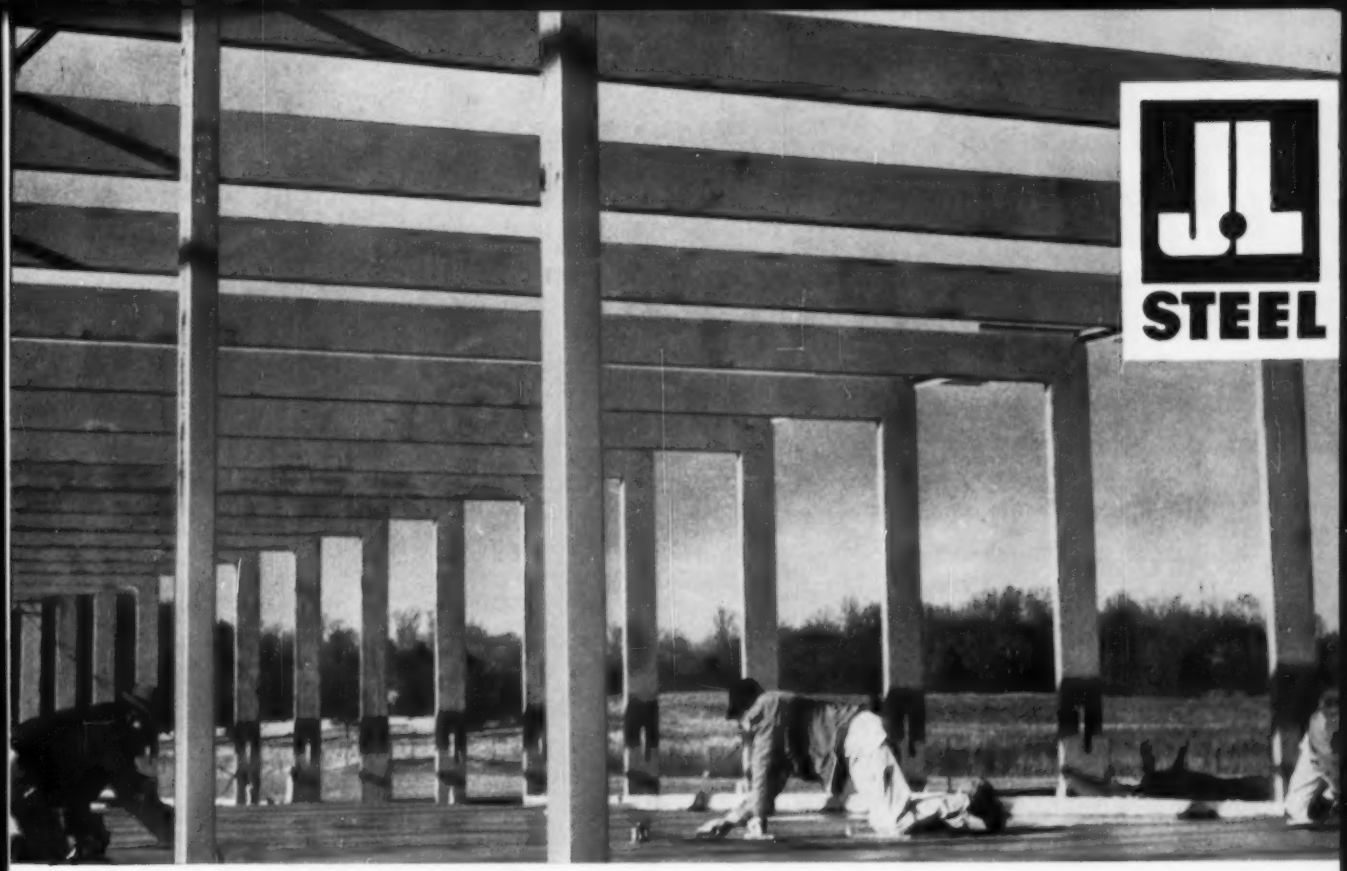
	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases In oil u	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 65-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 360 lb. bbl. per ton
Atlanta	$19.25	$28.275	$3.59	$3.86	$3.31	$3.15	$2.95	$2.95	$0.63	$57.75
Baltimore	19.00	27.90	2.75	4.25	3.35	2.78	4.25	4.25	.48	50.18
Birmingham	19.25	28.275	3.90	3.40	....	3.37	2.80ni	2.80ni	.87ff	42.65ee
Boston	19.00	27.90	....	....	....	3.30gq	2.83aq	2.93aq	.45q	56.00g
Chicago	19.00	27.90	....	....	....	3.57lu	3.00lo	3.00lo	43.80lbb	55.70l
Cincinnati	19.00	27.90	....	....	....	3.15	2.63	2.63	.504y	52.36
Cleveland	19.00	27.90	2.353pgg	2.587pg	2.764pg	3.15q	2.62o	2.62o	.464y	47.00AA
Dallas	19.25	28.65	....	3.13ff	....	3.50q	3.75o	4.35o	.464	58.80AA
Denver	19.50	28.40	3.29	3.15	3.04	3.84	2.30o	2.30o	.43ff	45.00
Detroit	19.00	27.90	3.35	3.25	2.60	2.656	2.409	2.409	.53	47.30
Kansas City	19.00	28.65	3.84	3.12	2.76	3.65ni	3.49o	3.49o	.58y	53.70
Los Angeles	19.00	28.15	3.30n	4.50n	4.20n	3.20n	2.15cn	§	.70ggy	§
Minneapolis	19.00	29.65/28.02	....	....	....	2.935dd	2.35Aidd	2.35Aidd	.464dd	48.00r
Montreal	.....	21.95	5.02Dgh	5.04gfh	4.65Pgh	5.25f	4.65f	4.65f	1.60	....
New Orleans	.....	.....	....	....	....	3.15	2.62	2.62	0.756	....
New York	19.00	27.90	....	....	....	2.84G	2.36Go	2.36Go	.463Gs	48.00*
Philadelphia	19.00	27.90	3.60	3.40/3.65	3.50/4.50	2.54	2.94	2.94	.37	26.00
Pittsburgh	19.00	27.90	3.10	3.36	3.68	3.72	2.85o	2.85o	.42	58.75
St. Louis	19.00	27.90	....	....	....	2.86n	2.36A	2.36A	.46g	54.35
San Francisco	19.00	28.15	2.95	4.15	3.40	2.70	1.85**	2.84aa	.55	54.00
Seattle	19.00	28.40	3.47mcr	4.19mcr	....	3.84mqcr	3.33kmcr	....	.85mcr	47.20mw
Toronto	.....	.....	....	....	....	4.48	4.10r	4.65o	1.70j	88.00A

*‡ Delivered. * Note: Red lead in oil 50¢ higher than white lead in oil. *a Red lead prices change frequently due to pig lead price changes. *b U. S. War Dept. Spec. 3-49A. *c ASTM Spec. D266-31. *d 80% minimum ferric oxide. *e 10 lb. *f Per 432 sq. ft. *g F.o.b. yard, Roxbury. *h Per roll, 65 lb. *i Not carload lot prices; Minneapolis and vicinity. *j 45 gal containers. *k Per cwt. *l Not used. *m 1% discount for cash. *n F.o.b. city. *o Per 60-lb. roll. *p 6-drum, 50 gal. ea. *q Per 90-lb. roll. *r F.o.b. factory, Chicago. *s Truckload. *t Federal tax included, add 5% mun. & prov. tax. *u Per 90-lb. square. *v Per ton. *x Mineral surfaced. *y 55-gallon container. *z Drums. *aa 15 lb., 324 sq ft roll. *bb Roofers coating and cement; Price per ton. *cc LCL, truck delivery. *dd 2% cash discount. *ee Asphalt pitch in 100 lb. package *ff 5-gal. drums. *gg F.o.b. factory. *hh Incl. freight. *ii Per roll. *A 400 lb barrels. *B ASTM Spec D-962-49. *D Std. Black. *E Ready-mixed. *F Over 80% ferric oxide. *' Aver. wt. approx. 425 to 550 lbs. drums. *G F.o.b. factory points

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER† Neat per ton	Gauging per ton	VERMICULITE† Home Insulation pellets	Plaster aggregate	Concrete Aggregate Untreated	PERLITE Plaster Aggregate	Concrete Aggregate Untreated	ALUMINUM SHEET‡ Flat, .102" th 36"x96" & 48"x144" per lb	Corr roof .032" th 35"x12' per sh.u	STAINLESS STEEL SHEET*-TYPE 302g 20 ga 48"x96-120" per cwthh	28 ga 36"x120' per cwtmm	COPPER WATER TUBING-TYPE L 2000 ft lots per ft¾"b	½"c
			per bag of 4 cu ft										
Atlanta	$30.00	$36.00	$1.55s	$1.45s	$1.90sl	$1.40	$1.40	$0.422n	$6.57s	$61.44n	$67.50n	$18.11f	$25.41f
Baltimore	22.85	33.25	0.95	1.15	1.15	1.15	1.65	0.391	0.427r	56.25	64.25	0.1951	0.2745
Birmingham	38.00	43.00	1.55	1.55	1.60f	1.55	1.55	0.475	9.52	62.26	70.76	0.1811	0.2541
Boston	22.00	29.00	1.15/1.20	1.10/1.25	1.45	1.45	1.60	0.505	28.56op	59.373dd	65.51ddff	0.1811	0.2541
Chicago	26.80	26.80	1.55	1.60	1.60f	1.50	1.50	0.474	9.805fp	62.40ee	70.90ee	0.1811	0.2541
Cincinnati	21.60**	21.60**	1.75	1.75	1.75	1.38	1.44	0.400	8.66	60.95	66.70ff	0.1811	0.2541
Cleveland	28.00	43.00	1.13	1.16	1.24l	1.45	1.45	0.44aa	8.66	62.43	70.93	18.11f	25.41f
Dallas	29.80	31.80	1.20	1.25	1.30f	1.21	1.32	0.379	0.439r	55.00	63.00	0.1449	0.2029
Denver	25.00	25.00	1.45	1.35	1.50	1.40	1.55	0.444	9.80	60.19gg	70.60gg	0.1811	0.2541
Detroit	25.00	25.00	1.29	1.33	1.41	1.54	1.61	0.455	9.235	62.50f	71.00f	15.22foo	28.83f
Kansas City	30.00	35.00	1.30	1.30	1.40	1.35	1.50	0.451	10.95	62.32	70.32	20.54f	28.83f
Los Angeles	26.20	27.20	1.25ii	1.20ii	1.25ii	..	1.60	0.484	8.99	61.85	82.10	0.2054	0.2883
Minneapolis	32.00	32.00	1.50	1.60	1.80	1.40	1.60	0.481	9.00	62.96	76.46ff	0.1851	0.2541
Montreal	28.80	33.20	1.10	1.30	1.30	1.15a	1.15a	0.437	9.25	66.50		0.264	0.322
New Orleans	32.00	45.00	1.25	1.35	1.35	1.25	1.25	0.422	8.303	62.04	70.54	0.1987	0.2796
New York	24.00	30.00	1.25	1.23	1.30	1.30	1.30	0.474fo	9.46f	63.23	71.73	18.11f	25.41f
Philadelphia	23/25	32.00	1.35	1.35	1.40	..	..	26.50ewz	7.50f	53.23fi	60.98f	18.57f	26.09f
Pittsburgh	27.50	31.00	1.30	1.30	1.32	1.35	1.35	0.42	9.19	56.81	62.63	0.2045	0.2572
St. Louis	29.00	40.00	1.30	1.55jj	1.50	1.60	1.45	0.487	9.80	62.83	69.08	18.11fm	25.41fm
San Francisco	27.85	32.00	1.15	1.15	1.36	1.15	1.15	0.49	8.90cc	66.99	75.47	0.1811	0.2541
Seattle	38.00	41.00	1.45	1.25k	1.85l	1.40k	....	0.422	8.303	64.10	72.60	0.1951	0.2745
Toronto	32.50	42.00	1.20	1.20	1.35	....	....	0.412	24.00	71.00	80.50	0.3289pp	0.4136pp

† trucklots, delivered * carload ‡ delivered *a fob city *b ½" O.D. *c ⅝" O.D. *f per 100 ft *g 5 tons & up; cold roll, anneal & pickled; 2B finish *h 15M lb *j 1100 & 3003 alloy, mill finish *k per bag of 3 cu ft *l treated with air entraining agent *m 2-10M ft *n fob plant, fr allow *o 5M lb & up *p 100 sq ft quantity *r per lb *s 30¢ bag *t 36" x 96"-10.61 lb/sh; 48" x 144"; 21.7 lb/sh *u 19.31 lb/sh *v fob plant *w 48" x 144" *x 36" x 96" $13.25/sh *aa 16M lb & up *bb fob mill *cc 28" x 8-12' *dd add $0.75 cwt for boxing *ee 4 tons & up *ff 26 ga *gg add $2/cwt boxing; $0.75/cwt on skids *hh Theoretical wt for 48" x 96"; 50.4-lb, per sh. *ii 300-bag lots *jj per 100-lb bag *mm Theoretical wt: 19.7-lb per sh. *nn Deliv, warehouse means *oo ¼" O.D. *pp Incl 10% sales tax



RIGID STEEL BENTS FORM BASIC FRAME OF WHEATLEY SCHOOL, EAST WILLISTON, LONG ISLAND

Boxed and Exposed J&L JUNIOR CHANNELS give classrooms clean, fresh appearance

Architect W. Frank Bower, Jr., of La Pierre, Litchfield & Partners, New York, has employed 130 tons of Junior Channels in the new two million dollar Wheatley School (East Williston, Long Island Junior-Senior High School). The 12″, 10.6# Junior Channels are boxed to make rigid bents forming the basic frame of the classroom buildings.

The bents were fabricated in two sections by De Voe Iron Works, Inc. of Long Island City, then trucked to the job. Erection went fast. Mr. Stephen J. De Voe, Jr. reported that it required only five hours to erect the 56 bents in one 232′ x 71′-4″ building.

Mr. Bower summed up the advantages of using J&L Junior Channels in the school's unique design by saying:

"The exposed structural steel bents or rigid frames are the basic frame of the building. This was done to take advantage of insulating cement and wood fiber structural plank which has excellent acoustical properties. In addition we avoid the use of hung ceilings. As a result we estimate savings of $40,000 to $50,000 on this $2,000,000 building.

"This type of construction eliminates the confined air space between roof and hung ceiling which, unless mechanically ventilated, stores hot air to reflect heat on the classrooms in the warmer months. The rigid frames give a cleaner, fresher look than alternate materials. We prefer them as being more interesting than the usual flat hung ceiling. They also give us a chance to introduce more color into the classrooms."

If you're designing light occupancy buildings, ask us for complete information about J&L Junior Channels. Take advantage of the strength of these light weight hot rolled sections, and their adaptability to a wide range of architectural design.

Jones & Laughlin
STEEL CORPORATION · PITTSBURGH

Artist's rendering of the Wheatley School

VULCATEX® *lasts longer . . .*

makes caulking easier

Vulcatex does a more dependable job because it forms a tough, weather-resistant outer skin, yet stays live and resilient underneath. It resists vibration, will expand and contract without losing its bond or cracking.

Vulcatex Thriftpaks are quick and economical . . . eliminate messy gun loading and cleaning. No waste, no hardening in the container. Hermetically sealed packs assure that Vulcatex is always in factory-fresh condition . . . not thinned or adulterated in any way. Vulcatex, in Thriftpaks or bulk, is available in gray or white from your favorite dealer, or from one of our conveniently located offices.

FREE OFFER!

A FREE caulking gun will be supplied with each purchase of three Thriftpak Units (Unit consists of one hundred individual Thriftpaks—approx. total: 10 gallons).

This offer is valid only during the month in which this ad appears, and in the United States and Territory of Hawaii (unless State laws prohibit).

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Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, L. M. FELIX, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

† **Conn., New London**—FENDER PILES—BA 10/30—Officer in Charge of Constr., U. S. Naval Submarine Base, New London, fender piles repairs and warehouse, Conn. State Pier.

Conn., Mansfield—SUB-STATION—BA 10/31—State P. Wks. Dpt., sub-station for generating facilities, Mansfield State Training School, Proj. BI-X-94. CD 2/7/49, under Public Bldgs.

Massachusetts—RECREATION AREA—BA 11/1—Commonwealth of Mass., Metropolitan Dist. Comn., 20 Somerset St., Boston, constr. Truman Hy. Recreation area, Neponset River Reservation, Hyde Park. $110,000. Plans deposit $2, refundable.

Conn., Hartford—BA 11/8—City, City Hall, Main St., installing 10 heavy duty diesel engines in South and North Meadows Pumping Stations, with needed drive equipment and 3 new pumps. $276,000. Winfred W. De May, city engr. CD 9/18.

† **N. H., Portsmouth**—SITE PREPARATION—Bids Asked—Base Procurement Office, Portsmouth Air Force Base, Portsmouth, site preparation and utilities. $900,000. Bids Oct. 12 cancelled. Koehler & Isaak, 922 Elm St., Manchester, archts. Joseph L. Paley, 105 Newbury St., Boston, Mass., engr. CD 10/8.

BUILDINGS—BA

Conn., Trumbull—SCHOOL—BA 10/29—Town, Supt. Schools, Middlebrook School, Trumbull, Booth Hill School addn., Booth Hill Rd. $425,000. Plans deposit $50. Jesse J. Hamblin, 1188 Main St., Bridgeport, archt. CD 5/9.

Mass., Beverly—SCHOOL—BA 11/1—City, Elementary School Bldg. Comn., c/o Supt. Schools, 3 Essex St., elementary school, Laurel St. $360,000. Plans deposit $100, refundable. Adden, Parker, Clinch & Crimp, 177 State St., Boston, archts. CD 11/17.

▲ **Mass., Newton**—TEMPLE and SCHOOL—BA 11/5—Temple Mishkan Tefila, 122 Elm Hill Ave., Roxbury, temple and school Hammond Pond Parkway. $1,000,000. Plans deposit $50, refundable. Percival Goodman, 40 E. 49 St., New York, N. Y., archt. Ammann & Whitney, 111 Eighth Ave., New York, N. Y., struct. engrs. CD 3/7.

BUILDINGS—SLC

Conn., Suffield—PARISH HOUSE—First Church of Christ Cong., 188 Main St., soon lets contract 2 story, 40x80 ft. masonry, steel, parish house. $345,000. A. Geo. Mallis, Boston Neck Rd., archt. Munson & Mallis, Inc., 121 Chestnut St., Springfield, Mass., engr. CD 9/18.

Mass., Hingham—DIAL, etc—New England Telephone & Telegraph Co., 185 Franklin St., soon lets contract 3 story, bsmnt., 80x146 ft., dial bldg. and test center. $500,000. John M. Gray Co., 169 High St., Boston, archt. A. Ehrenzella, Inc., 329 Washington St., Dorchester, engr. CD 9/6.

HEAVY CONSTRUCTION—LB & CA

MASSACHUSETTS—Commonwealth of Mass., Dpt. Pub. Wks., 100 Nashua St., Boston,

Mass.—Colonna Bros., Inc., 8 Arlington Place, Framingham, Mass. LB $565,156, est. $481,719. hy. reconstr. John Wise Ave. and Essex Rd. Rte. 121 and Rte. 1A, Essex and Ipswich.

Mass.—Dingley Contg. Co., 52 Everett St., Natick, Mass. LB $395,424, est. $377,451. state hy. and bridge New Ashford Rd., Williamstown. Bids Oct. 9. CD 10/3.

Ralph Richards Co., 495 Whiting Ave., Dedham, Mass. LB $277,689, est. $275,000. Proj. 239, wid'n. of Mystic River, Arlington, Medford and Somerville, MASSACHUSETTS. Commonwealth of Mass., Metropolitan Dist. Comn., Constr. Div., 20 Somerset St., Boston, Mass. Bids Oct. 11. CD 9/26.

National Gunite Corp., 101 W. Dedham St., Boston, Mass. CA, $64,800. million-gal. supply tank, Minor Rd., BRISTOL, CONN. City, Bd. Water Comrs., 119 Riverside Ave., Bristol, Conn. Awarded Oct. 11.

Consolidated Constr. Co., Inc., 919 Albany Ave., Hartford, Conn. LB $198,093. (3 bidders) 7,715 ft. 8- to 15-in. sanitary sewers with manholes, appurtenances, Burnside Ave., Cummings St., Preston St., etc. with siphon under Hockanum River, East Hartford, HARTFORD, CONN. Metropolitan Dist., 115 Broad St., Hartford, Conn. Bids Oct. 11. CD 10/3.

▲ **Phoenix Bridge Co.**, Phoenixville, Pa., CA $1,653,000 superstructure for Founders Bridge, Hartford-East Hartford, over Connecticut River, HARTFORD, CONN. Hartford Bridge Auth., 284 Sheldon St., Hartford Conn. Bids Oct. 3, awarded Oct. 9. CD 10/10, under LB.

White Oak Excavators, Inc., 61 E. Main St., Plainville, Conn., CA $167,700. embankment test section and installing test piles at each approach to proposed Wolcott Ave. bridge over Connecticut River, South Windsor, HARTFORD, CONN. Hartford Bridge Auth. 284 Sheldon St., Hartford, Conn. Bids Sept. 17, awarded Oct. 8. CD 9/11.

Town, Town Office Bldg., Milford, Conn., rejected bids Sept. 19, resurf. Bridgeport Ave., MILFORD, CONN. LB $102,355. CD 10/2, under LB.

BUILDINGS—LB & CA

Nickerson & O'Day, 133 Elm St., Brewer, Me., CA Approx. $400,000. Y.M.C.A. addn., remodeling, Hammond St., BANGOR, ME. Bangor Young Men's Christian Assn., 127 Hammond St., Bangor, Me. Bids Sept. 13. CD 9/11.

Rust Engineering Co., 1065 Main St., Waltham, Mass. CA Approx. $700,000. design and construct PULP MILL, 67x100x30 ft. prep. bldg.; 200x75x80 ft. pulp process; 60x75x90 ft. recondition bldg.; recausterizing; 260x70x90 ft. high and turbine bldg. addn., LINCOLN, ME. Eastern Corp., South Brewer, Me. CD 4/9.

Owner, c/o Warren P. Snyder, exclusive agent, 348 Boston Rd., Billerica, Mass. Owner Builds. Approx. $348,000. RESIDENTIAL DEVELOPMENT, "Turnpike Acres" Middlesex Turnpike, 27 ranches, BILLERICA, MASS.

Corcoran Contg. Corp., Bedford St., Burlington, Mass. Owner Builds. $345,000. RESIDENTIAL DEVELOPMENT, "Woodside Manor Estates" 19 houses, BILLERICA, MASS.

George A. Fuller Co., 11 Beacon St., Boston, Mass. CA Approx. $500,000. MERCHANTS BLDG., BOSTON, MASS. Chinese Merchants Assoc., 20 Hudson St., and Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Bids Oct. 3. CD 10/3.

▲ **Thomas J. Diab & Sons**, 52 Beacon St., Boston, Mass. Owner Builds. Approx. $1,000,000. RESIDENTIAL DEVELOPMENT, "The Ledges" 35 houses, Howe Rd., COHASSET, MASS.

Brick & Concrete Constr. Co., 501 High St., Dedham, Mass. CA $509,000. Franklin SCHOOL addn., alterations, LEXINGTON, MASS. Town, Bldg. Comn., c/o Supt. School, 1475 Mass. Ave., Lexington, Mass. CD 9/17, under LB.

Joseph Stivaletta & Sons, 505 High St., Dedham, Mass. Owner Builds. Approx. $360,000. RESIDENTIAL DEVELOPMENT, "Neponset Valley Acres" 18 houses, Earl St., NORWOOD, MASS.

Central Engineering & Constr. Div., Gilbane Building Co., 155 Main St., Pawtucket, R. I. CA Approx. $150,000. BUILDING NO. 7 addn., 19 Leland St., PROVIDENCE, R. I. Brown & Sharpe Mfg. Co., Promenade St., Providence, R. I. Earl T. Richards, 18 Daniels St., Pawtucket, R. I., archt.

Massacoe Builders, Inc., Meadow Plains Rd., Simsbury, **Conn., LB $549,774. (7 bidders) Wintonbury Elementary** SCHOOL, BLOOMFIELD, CONN. Town, School Bldg. Comn., Town Hall, Bloomfield, Conn. Bids Oct. 9. CD 9/18.

Myrose Constr. Corp., 299 Main St., East Hartford, Conn., LB $559,600. (6 bidders) Proj. MR 58, mod**erate rental HOUSING, EAST HARTFORD**, CONN. East Hartford Housing Auth., 70 Cannon Rd., East Hartford, Conn. Bids Oct. 9. CD 9/18.

J. Warren Mylchreest Co., 49 William St., Middletown, Conn. LB $477,000. (6 bidders) ELEMENTARY SCHOOL and CONVENT, and AUDITORIUM, Mitchell Ave., GROTON, CONN. Sacred Heart Roman Catholic Parish, 42 Eastern Point Rd., Groton, Conn. Bids Sept. 25. CD 10/3, under LB.

Michael A. Gallicchio, 28 Center St., Torrington, Conn. CA, Est. Approx. $95,000. 60x142 ft. FREIGHT TERMINAL, Sullivan St., SOUTH WINDSOR, CONN. Schuster's Express Inc., 48 Norwich Ave., Colchester, Conn. Allan H. Pokras, 2839 Main St., Bridgeport, Conn., archt. Awarded Oct. 11.

Town, School Bldg. Comn., Jessup Rd., Westport, Conn., rejected bids Aug. 22, Burr Farm Elementary SCHOOL, Long Lots Rd., WESTPORT, CONN. $750,000. CD 8/7.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

† **N. J., Clifton**—MAST INSTALLATIONS—BA 10/30—Dist. P. Wks. Office, Third Naval Dist., Federal Office Bldg., 90 Church St., New York 7, N. Y., antenna mast installations repairs, U. S. Naval Reserve **Training Center, NBy-5091, Spec. 4091/56.**

† **New York**—BA On Or About 10/30—U. S. Eng., 111 E. 16 St., New York, Zone 3, dredging to a depth of 27 ft. below mean low water involving removal of approx. 115,340 cu. yd., place measurement of all material except ledge rock from Hudson River, at Hudson, Priming Hook and Stockport Middleground, CIVENG-30-075-57-37.

† **N. Y., Oswego**—ANTENNA MAST—BA 10/30—Dist. Pub. Wks. Office, Third Naval Dist., Federal Office **Bldg., 90 Church St., New York, Zone 7, repairs** to antenna mast installations, U. S. Naval Reserve Training Center, NBy 4092, Spec. 4092/56.

† **D. C., Wash.**—BA 10/31—Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, road repairs, Naval Observatory, NBy 8318, Plans deposit $25.

† **Md., Bethesda**—FUME HOOD—BA 10/31—Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C., installation fume hood, Bldg. No. 138, National Naval Medical Center, NBy 6092. Plans deposit $25. CD 8/7, under Public Buildings.

† **N. J., Earle**—CROSS TIES—BA 10/31—Dist. P. Wks. Office, Third Naval Dist., Federal Office Bldg., 90 Church St., New York 7, N. Y., replace cross ties, U. S. Naval Ammunition Depot, NBy 8101, Spec. 8101/56. Plans deposit $25. CD 8/28, under Public Buildings.

N. Y., New York—FERRY TERMINAL—BA 11/2—Comr. Marine & Aviation, Pier 1, North River, Zone 1, Contr. No. 2974, modernization of bridges of Slips Nos. 1, 2 and 3, Whitehall Street Ferry Terminal, Manhattan Boro. Plans deposit $30. CD 9/9/55.

N. Y., Brooklyn—TEST PILES—BA 11/6—At office Chief Engineer of the Port of New York Auth., 111 Eighth Ave., New York, Zone 11, driving timber test piles and load testing new and existing timber piles at site of Pier 2 at Brooklyn-Port Authority Piers. Plans deposit $30. CD 11/1.

▲† **N. Y., Rome**—RUNWAY—BA On Or About 12/5—U. S. Eng., 111 E. 16 St., New York, Zone 3, runway, taxiway, support facilities, (FY 1956-1957), Griffiss Air Force Base, ENG-30-075-57-67, $15,000,000. Plans deposit $75. CD 9/28.

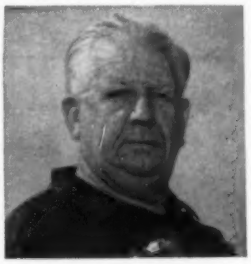
BUILDINGS—BA

N. Y., East Meadow—STORAGE—BA 10/30—County Executive, Nassau Co., Old County Court House, Mineola, farm equip. storage bldg., Nassau County Jail. Plans deposit $25.

▲ **N. Y., Port Washington**—SCHOOL—BA 11/1—Bd. Educ., Port Washington, John Philip Sousa Junior High School. $2,000,000. Extended date. Eggers & Higgins, 100 E. 42 St., New York, Zone 17, archts. CD 9/7.

Md., Rockville—SCHOOL—BA 11/5—Montgomery Co. Bd. Educ., Eastern Junior High School addn., Silver

(Continued on page 90)



MR. ROY WALTON
President,
Western Concrete and Equipment Co., Los Angeles.

1956 Ford T-800. Maximum GVW 45,000 lb.; GCW 65,000 lb. New thermostatically controlled cooling fan available at slight extra cost.

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"Here's how we get a $5,280 daily bonus with our 85 Ford Trucks

"Our Ford T-800's carry 2,000 lb. more concrete than other trucks of comparable GVW. They earn us $6 extra per trip. When they make 880 trips a day, we get a bonus of $5,280!

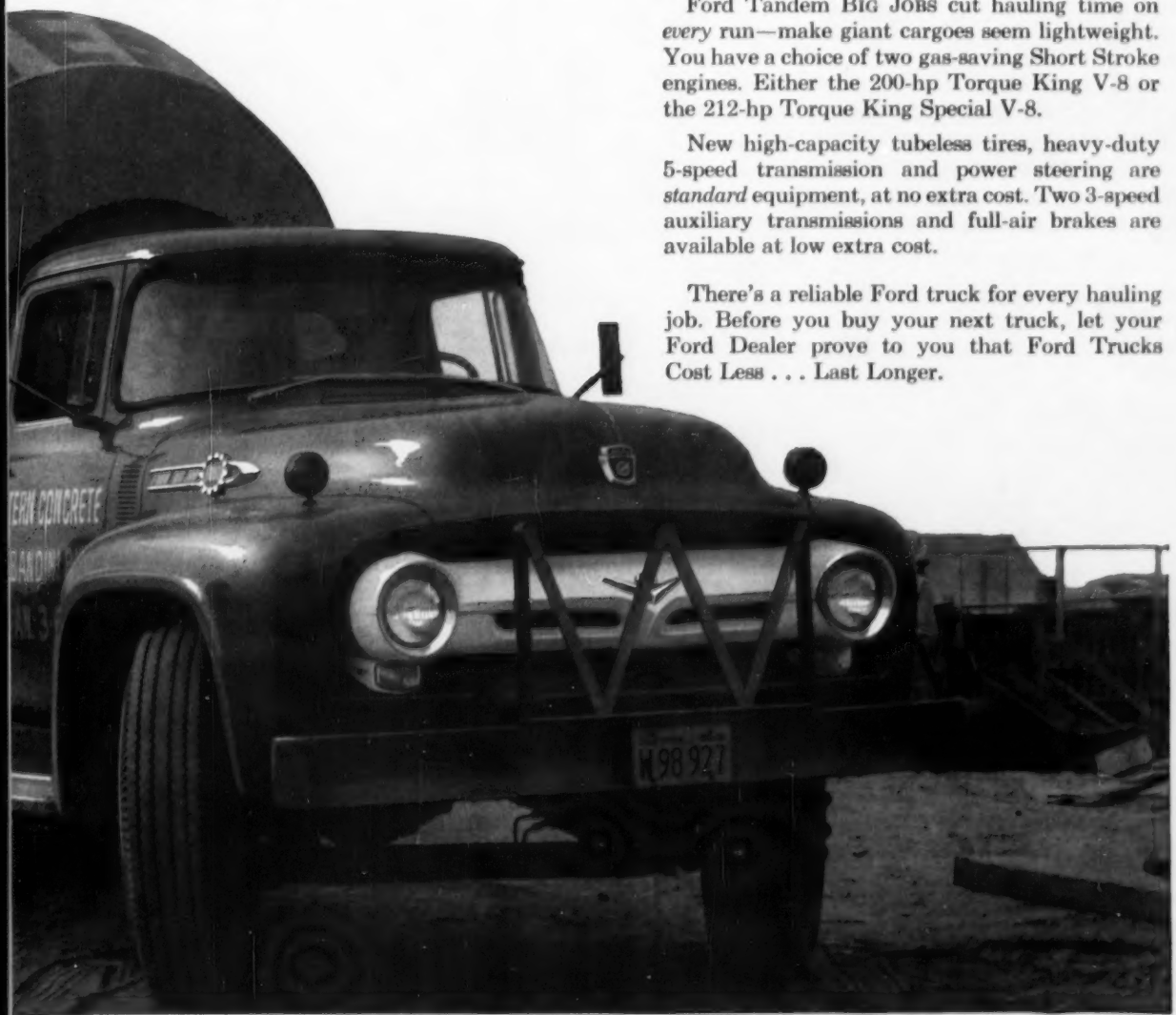
"The lighter weight of our Ford T-800's allows a 28,000 lb. payload," says Mr. Walton. "With Fords we haul 6,160 yd. of concrete in 880 trips during an 8-hour day. Competitive trucks we have tried, require 948 trips to do the same job. *That's how Ford trucks cost less for us.*

"And that's why we've used Fords since 1944," Mr. Walton explains.

Ford Tandem BIG JOBS cut hauling time on *every* run—make giant cargoes seem lightweight. You have a choice of two gas-saving Short Stroke engines. Either the 200-hp Torque King V-8 or the 212-hp Torque King Special V-8.

New high-capacity tubeless tires, heavy-duty 5-speed transmission and power steering are *standard* equipment, at no extra cost. Two 3-speed auxiliary transmissions and full-air brakes are available at low extra cost.

There's a reliable Ford truck for every hauling job. Before you buy your next truck, let your Ford Dealer prove to you that Ford Trucks Cost Less . . . Last Longer.



TRUCKS THAN ANY OTHER MAKE

(Continued from page 87)

Spring. Plans deposit $50, Ronald Senseman, 327 Carroll Ave. N. W., Wash., D. C., archt. CD 2/2/53.

Md., Rockville—SCHOOL—BA 11/5—Montgomery Co., Bd. Educ., addn. No. 3 to Poolesville Junior-Senior High School, Poolesville. Plans deposit $30. Ronald Senseman, 327 Carroll Ave. N.W., Wash., D. C., archt. CD 2/2/53.

† **D. C., Wash.**—ANNEX—BA 11/6—U. S. Eng., 1st and Douglas Sts. N.W., Wash. 25, D. C., renovations to Barnes Annex at United States Soldiers Home. CIVENG-49-080-57-6-(30). CD 10/1.

† **D. C., Wash.**—BUILDING—BA 11/7—Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, 1 story addn., bldg. 43 at Naval Security Station, NBy 8308. Plans deposit $25.

▲ **N. Y., New York**—SCHOOL—BA 11/9—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, general constr. J. H. S. 13, Fifth Ave., 106 and 107 Sts., Manhattan. $2,642,000. Plans deposit $25.

† **Md., Baltimore**—BARRACKS—BA 11/14—U. S. Eng., 24 St. and Maryland Ave., Zone 18, 3 story, 34x156 ft., two wings 40x117 ft., H-shaped enlisted men's barracks, etc., Two Company, Fort Holabird. ENG-18-020-57-14, $500,000. Plans deposit $25, Fenton & Lichtig, 2219 Maryland Ave., Zone 18, archts. CD 8/3, under LB.

▲ **N. Y., New York**—SCHOOL—BA 11/15—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, general constr. Fashion Institute of Technology West 27 and 28 Sts. between 7th and 8th Aves., Manhattan. $4,000,000. Plans deposit $75. CD 1/20/55.

BUILDINGS—SLC

N. J., Point Pleasant—HOSPITAL—Point Pleasant, Hospital, Pine Bluff Ave., soon lets contract, hospital addn. $650,000. Ferrenz & Taylor, 152 W. 42 St., New York, N. Y., archts. CD 3/22.

N. Y., Ithaca—OFFICE—National Cash Register Co., S. Main and K Sts., Dayton, O., soon lets contract, office, Lorenz & Williams, 223 W. First St., Dayton, O., archts. CD 7/18.

N. Y., New York—FACTORY—New York Philanthropic League United Order True Sisters, Inc., 150 W. 85 St., Zone 24, soon lets contract altering factory, 334-36 E. 23 St. $300,000, Joseph J. & Lawrence H. Furman, 303 W. 42 St., Zone 36, archts. CD 10/4.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—John W. Johnson, state supt. Dpt. P. Wks., The Gov. Alfred E. Smith State Office Bldg., Albany,

Del Balso Constr. Corp., 500 Zerega Ave., New York 12, N. Y. CA $5,950,556. constr. 0.78 mi. depressed portion of new six lane divided Prospect Expressway between Fifth and Tenth Aves. in Brooklyn, 1.63 mi. of access roads, Kings Co. CD 9/18, under LB.

▲ **Schutt Constr. Co.**, Genoa, Wis. LB $482,780. Schedule 2, approx. 1,900 acres, reservoir clearing between Waddington and Barnhart Island Power Plant, St. Lawrence Co., Spec. PA-5-11023, St. Lawrence Contr. No. 31B, NEW YORK. The Power Authority of the State of New York, 270 Broadway, New York, N. Y. Bids Oct. 16. CD 10/11;
Hennessy-Norrie, North Bay, Ont. LB $372,956. Schedule 4, approx. 1,900 acres; LB $856,932. Schedule 5, (combination of 2 and 4), (New York).

Rock Asphalt, Inc., 223 Erie St., Buffalo, N. Y. LB $168,585. resurf. Group No. 67, Burton St. between Main and Maple Sts.; Chippewa St. between Delaware Ave. and Genesee St., Ellicott St. between Goodell and Carlton Sts.; Hamburg St. between South Park Ave. and 164 St. south of Perry St.; Oak and North Oak St. between Genesee and Carlton Sts., BUFFALO, N. Y. City, Dpt. P. Wks., Buffalo, N. Y. Bids Sept. 27. CD 9/20;
Kendall Roadways, Inc., 1375 William St., Buffalo, N. Y. LB $201,283. resurf. Group 65, Bailey Ave. between Seneca St. and Clinton Ave.; Folger St. between South Park Ave. and Tifft St. with new curbs where necessary; Heussey Ave. between Abott Rd. and Bailey Ave.; Knoerl Ave. between Seneca St. and north Legion Dr. with new curbs where necessary; Leamington Pl. between Seneca St. and 610 ft. northerly; Mount Vernon Ave. between Seneca St. and northerly end (Buffalo, N. Y.).

▲ **Bethlehem Steel Corp.**, 25 Broadway, New York, N. Y. CA $1,760,829. 14,730 tons steel H-piles for passenger and cargo terminal, Pier 40 for lease to Holland American Line, NEW YORK, N. Y. Dpt. Marine & Aviation, Pier A, North River, New York 4, N. Y. Roberts & Schaefer Co., 254 W. 54 St., New York 19, N. Y., engrs. 60 8/15/55.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Pa.—R. J. Nichols Co., P. O. Box 229, Kittanning, Pa. LB $1,134,781. (4 bidders) wid'n. 52,494 ft. existing road with crushed aggregate base, with bit. surf. 3 rein.-conc. bridges Summit, Oakland and Donegal Twps. Millerstown Boro, Butler Co.;

Pa.—J. Robert Bazley, Inc., P. O. Box 298, Pottsville, Pa. LB $857,008. (10 bidders) constr. 8,261 ft. divided hy. of rein.-conc. I-beam one plate girder bridge, Greenwich Twp., T.R. U. S. 22, Berks Co.;

Pa.—L. M. Hutchison, R.D., Mt. Union, Pa. LB $700,401. (6 bidders) wid'n. 17,891 ft. existing road with crushed aggregate base, Platt and Woodward Twps., T.R. 220, Lycoming Co.;

Pa.—Foster Grading Co., R.D. 2, Jackson Center, Pa. LB $635,319. (2 bidders) constr. 50,295 ft. crushed aggregate base with bit. surf. 20 ft. wide rein.-conc. bridge, Shenango, Lackawannock and E. Lackawannock Twps., W. Middlesex Boro, Mercer Co.;

Pa.—Keeler Constr. Co., Pennsburg, Pa. LB $531,891. (11 bidders) constr. 7,518 ft. crushed aggregate base with bit. surf. 2 concrete deck I-beam bridges W. Pottsgrove and Upper Pottsgrove Twps., Pottstown Boro, L.R. 779 (3), Montgomery Co.;

Pa.—A. B. Cole, Meshoppen, Pa. LB $325,876. (4 bidders) constr. 9,775 ft. divided hy. consisting of wid'n., overlay existing road with crushed aggregate base, bit. surf. Clinton and Nicholson Twps., T.R. 11, Wyoming Co.;

Pa.—Ralph V. Daniels, Inc., R. D. 1, Mechanicsburg, Pa. LB $92,491. (3 bidders) constr. 2,466 ft. crushed aggregate base with bit. surf. 28 ft. wide, Bloomsburg, T.R. 42, Columbia Co.;

Pa.—W. L. Dunn Constr. Co., Cochranton, Pa. LB $98,872. (3 bidders) wid'n. 5,400 ft. existing road with crushed base Townville Boro, Steuben Twp., T.R. 408, Crawford Co.;

Pa.—Irving N. Loomis & Sons, Montrose, Pa. LB $129,301. (3 bidders) overlay, wid'n. 3,699 ft. existing road with crushed aggregate base bit. surf. 18 ft. wide, two bridges, Rome Twp., L.R. 08079 (4), Bradford Co.;

Pa.—The Marshall Constr. Co., 186 S. 15 St., Harrisburg, Pa. LB $146,100 (1 bidder) constr. 4,608 ft. crushed aggregate base with bit. surf. 20 ft. wide, I-beam bridge, Antrim Twp., L.R. 28004 (2), Franklin Co.;

Pa.—Mooney Bros. Supply Co., 133 Mahoning Ave., New Castle, Pa. LB $374,469. (3 bidders) constr. 35,914 ft. crushed aggregate base with bit. surf. 18 ft. wide, Mahoning and Pulaski Twps., T.R. 551, Lawrence Co.;

Pa.—Vern Sherwin, Somerset, Pa. LB $110,769. (5 bidders) constr. 2,511 ft. crushed aggregate base with bit. surf. 20 ft. wide, Noyes Twp., S. Renovo Boro, L.R. 18004 (5), Clinton Co. Bids Oct. 11. CD 9/19.

PENNSYLVANIA—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,
cancelled bids to have been opened Oct. 11, wid'n. 17,290 ft. road with plain c. conc. bit. surf. O'Hara and Harmar Twps., T. R. 28, Allegheny Co. Will re-advertise. CD 9/19.

† **Thos. W. Yoder**, 7136 Wisc. Ave., Bethesda, Md. LB $354,000. (15 bidders) battalion headquarters facilities, Special AAA Site W93, vicinity of Laytonsville, ENG-49-080-57-19-(18), MARYLAND. U. S. Eng., First and Douglas Sts. N. W. Wash. 25, D. C. Bids Oct. 11. CD 10/1.

Ligon & Ligon, 3310 Ridgewood Ave., Baltimore 15, Md. LB $152,876. Orems Run pumping station, force main, interceptor sewer, Contr. 515-S, TOWSON, MD. Comrs. Baltimore Co., County Office Bldg., Towson, Md. Bids Oct. 11. CD 10/3.

F. J. Alexander & Co., 1529 Vine St., Phila., Pa. CA $64,989. water distr. sys. alterations, L-2-56-W, LEWES, DEL. Town, Lewes, Del. Gardner & Sterling, Salisbury, Md., engrs.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Nello L. Teer Co., Trust Bldg., Durham, N. C. CA $3,335,199. surf. 8.431 mi. dual hy., Baltimore Co. Beltway Wilkens Ave. to U.S. 40, incl. 4-span railroad bridge, Contr. B 635-12-420, Baltimore Co. CD 9/18, under LB.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Wright Contg. Co., Brookhaven Rd., Columbus, Ga. CA $2,628,920. surf. 6.255 mi. divided hy. US 240-M-533-1-320 and M-485-2-320, Montgomery Co. CD 9/21, under LB.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Md.—J. O. & C. M. Stuart, 3121 South St. N. W., Wash. 7, D. C. LB $1,511,137. (11 bidders) surf. 2.96 mi. divided hy. U.S. Rte. 240, Contr. M 485-16-320, Montgomery Co.;

Md.—Dickerson, Inc., Box 448, Monroe, N. C. LB $456,336. (3 bidders) surf. 2.282 mi. State Rte. 16, Contr. D 279-1-120, Dorchester Co. Bids Oct. 9. CD 9/26.

† **Piracci Constr. Co.**, 2552 Woodbrook Ave., Baltimore 17, Md. LB $888,000. (2 bidders) installing hypersonic wind tunnel equip., Aberdeen Proving Grounds, ENG-18-02-57-10, ABERDEEN PROVING GROUNDS, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore 18, Md. Bids Oct. 11. CD 10/5.

BUILDINGS—LB & CA

George A. Fuller Co., 597 Madison Ave., New York 22, N. Y. CA Est. $750,000. LIGHTHOUSE for Blind Adults and Children and RESIDENTIAL CLUBHOUSE for Blind Women, Woodhaven Blvd. and Wetherole St., ELMHURST, N. Y. The Lighthouse N. Y. Assoc. for the Blind, 11 E. 59 St., New York 22, N. Y. CD 6/8.

▲ **Mar-Mes Constr. Co.**, 271 North Ave., New Rochelle, N. Y. CA $1,200,000. Harrison JUNIOR and SENIOR HIGH SCHOOL addn., alterations, HARRISON, N. Y. Bd. Educ., Harrison, N. Y. CD 1/11.

▲ **Brown-Leider-Graff Projects**, c/o Herman H. York, archt., 90-04 161 St., Jamaica, N. Y. Owner Builds. $4,500,000. 140 HOUSES, Davenport Ave. in Davenport Neck area, NEW ROCHELLE, N. Y.

▲ **Joseph P. Blitz, Inc.**, 150 E. 39 St., New York 16, N. Y. Owner Builds. $2,000,000. 18 story APARTMENT, Third Ave. and 57 St.; $2,000,000. 18 story APARTMENT, 30 E. 62 St., NEW YORK, N. Y. H. I. Feldman, 415 Lexington Ave., New York 17, N. Y., archt.

LeChase Constr. Co., 29 Saratoga St., Rochester, N. Y. LB $461,520. general constr. SCHOOL, SPENCERPORT, N. Y. Bd. Educ., Lyell Ave., Spencerport, N. Y. Bids Oct. 9. CD 10/2.

▲ **J. M. Straus & Co.**, 826 S. 20 St., Newark, N. J., LB $548,900, Livingston Ave. SCHOOL, CRANFORD, N. J. Bd. Educ., Cranford Twp., Cranford, N. J. Bids Aug. 16. CD 7/12;
American Bldg. Constr. & Supply Co., 191 Broadway, Long Branch, N. J., LB $507,500. Bloomingdale Ave. School (Cranford, N. J.).
Bids were over appropriation. Bond issue for addnl funds will be voted on Oct. 16 (Cranford, N. J.).

▲ **Frank Briscoe Co., Inc.**, 287 S. 19 St., Newark, N. J., CA Est. $4,250,000. 3 story, 190,000 sq. ft. OFFICE, MURRAY HILL, N. J. Bell Telephone Laboratories, 463 West St., New York 14, N. Y. Lockwood-Greene Engineers, 41 E. 42 St. New York 17, N. Y., engrs.

Ferber Co., 16 Johnson Ave., Hackensack, N. J., CA, Est. $600,000. WAREHOUSE, 10-acre tract on Humboldt Ave., NEWARK, N. J. Philco Corp., Tioga and C Sts., Phila., Pa. Frank S. Parker Assoc., 205 E. 43 St., New York, N. Y., archts.

▲ **Silver Bay Homes**, Att. John Clayton, Silver Bay Dr., Toms River, N. J., Separate Contracts, $1,102,500. 105-unit RESIDENTIAL DEVELOPMENT, Cattus St., etc., TOMS RIVER, N. J.

Walter J. Hand, 2100 E. State St., Trenton, N. J., CA $100,000. 1 story, 31,000 sq. ft., brick, block WAREHOUSE and OFFICE addn., YARDVILLE, N. J. Kaye Tex Mfg. Corp., Yardville, N. J. W. Henry Neubeck, 200 Pingree Ave., Trenton, N. J., archt.

† **Levco Constr. Corp.**, 215 Montague St., Brooklyn, N. Y. LB $873,000 (6 bidders) BUILDINGS addns., alterations, Veterans Admin. Hospital, COATESVILLE, PA. Veterans Admin., Munitions Bldg., Wash., D. C. Bids Oct. 9. CD 8/15.

▲ **Piracci Constr. Co., Inc.**, 2552 Woodbrook Ave., Baltimore 17, Md. LB $1,895,000. Marley Junior HIGH SCHOOL, Marley, ANNAPOLIS, MD. Anne Arundel Co. Bd. Educ., Annapolis, Md. Bids Sept. 25 CD 9/18.

▲ **Baltimore Contractors, Inc.**, 711 S. Central Ave., Baltimore 2, Md. LB $2,970,000. masonry, concrete, steel alterations, addns. to east wing of INFIRMARY, Baltimore City Hospitals, 4940 Eastern Ave., BALTIMORE, MD. City, Bureau Bldg. Constr., 410 Municipal Bldg., Baltimore 2, Md. Bids Oct. 10. CD 9/25.

E. E. Stuller, Taneytown, Md. LB $747,000. (3 bidders) general constr. 1 and 2 story, masonry Westminster Junior High School, WESTMINSTER, MD. Carroll Co. Bd. Educ., Westminster, Md. CD 4/6.

▲ **Ernest D. DiSabatino & Sons**, 2601 W. Fourth St., Wilmington, Del., CA, $2,935,000. HOSPITAL EXPANSION, WILMINGTON, DEL. Wilmington General Hospital, Broom and Linden Sts., Wilmington, Del Bids Aug. 30. CD 8/17.

SOUTH

HEAVY CONSTRUCTION—BA

† **Va., Oceana**—SERVICE FACILITY—BA 10/30—Dist. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, aviation service facility, Naval Air Station, NOy-85870, Spec. 43056. Plans deposit $25. CD 8/28.

† **Fla., Key West**—CLEANING JOINTS, etc.—BA 11/7—Dist. P. Wks. Office, Building No. 12, U. S. Naval Base, Charleston, S. C., cleaning and resealing joints in main concrete apron, Seaplane Base, U. S. Naval Air Station, NBy-8639, Spec. 8639/56. Plans deposit $10. CD 8/27.

† **S. C., Charleston**—CRANE TRACK REPAIRS—BA 11/7—Dist. P. Wks. Office, Building No. 12, U. S. Naval Base, Charleston, S. C., crane track repairs, U. S. Naval Shipyard, NBy-7810, Spec. 7810/56. Plans deposit $10. CD 6/25/52.

† **Fla., Jacksonville**—TELEPHONE FACILITIES, etc.—BA 11/8—Dist. P. Wks. Office, Bldg. No. 12, U. S. Naval Base, Charleston, S. C., electrical and telephone facilities, U. S. Naval Station, Cecil Field, NBy-4953, Spec. 4953/56. Plans deposit $10. CD 8/27.

† **Fla., Mayport**—BUILDING REHABILITATION—BA 11/8—Dist. P. Wks. Office, Bldg. No. 12, U. S. Naval Base, Charleston, S. C., rehabilitation Buildings Nos. 3 and 50, U. S. Naval Auxiliary Air Station, NBy-7862, Spec. 7862/56. Plans deposit $10. CD 9/8/49.

† **Fla., Panama City**—MAGAZINE AREA—BA 11/8—Dist. P. Wks. Office, Bldg. No. 12, U. S. Naval Base, Charleston, S. C., new magazine area, U. S. Navy Mine Defense Laboratory, NOy-91128, Spec. 49086 (Rev.). Plans deposit $15. CD 7/16, under LB.

Ga., Bainbridge—BARGE-HANDLING FACILITIES—BA 11/8—Georgia Ports Auth., Healy Bldg., Atlanta, barge-handling facilities, incl. dock, warehouse office, paved outdoor storage areas.

Fla., Belleview—BA 11/12—Town, Town Hall, water imprvs. project. Plans deposit $5. Russell & Axon, P. O. Box 1431, Municipal Airport, Daytona Beach, consult. engrs.

† **Tenn., Oak Ridge**—BA 11/13—U. S. Atomic Energy Comn., Oak Ridge, Proj. I, pumping station and Proj. II, water lines, part of Clinch River Make-up water sys., K-25 Area, Inv. 401-57-4A.

▲† **Ky., Louisville**—HANGAR, etc.—BA 11/14—U. S. Eng., 830 W. Broadway, Louisville, hangar, boiler house, supply and armament storage bldg., motor service shop, Air National Guard Facilities at Standiford Field, ENG-15-029-57-23, $3,000,000. Arrasmith & Tyler, Madrid Bldg., Louisville, archts.

(Continued on page 92)

Beth-Cu-Loy culvert rests easy under 64 ft of fill

Poking its nose out from under a 64-ft fill of earth and rock is a 340-ft-long culvert of Beth-Cu-Loy corrugated galvanized steel. This 66-in.-diameter culvert rests easy beneath its tremendous burden because Beth-Cu-Loy pipe is flexible, and thus tends to distribute the stresses peripherally.

Flexibility also permits corrugated galvanized steel pipe to take the impact and vibration of modern vehicular traffic. It takes care of changes in load caused by freezing and shifting soil, and makes grading and aligning easy.

With Beth-Cu-Loy galvanized steel drainage structures, there's less earth to remove, less to replace — the trench need be only as wide as the pipe. And installation is simple and speedy, without need for heavy equipment.

Beth-Cu-Loy culvert sheets conform to the rigid specifications of the American Association of State Highway Officials. They are rolled from open-hearth steel with copper added for corrosion-resistance. Additional protection comes from a tight, 2-oz coating of Prime Western Zinc by triple-spot test.

We shall be glad to furnish you with further details about Beth-Cu-Loy corrugated culvert sheets, as well as the names of fabricators who form them into pipe. Just call or drop a line to the Bethlehem district office nearest you.

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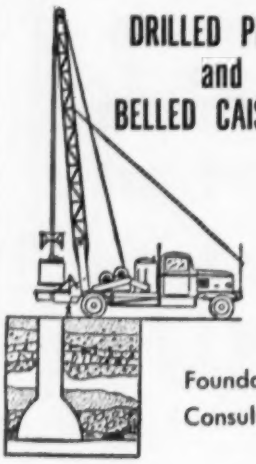

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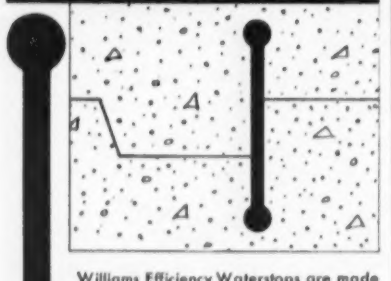

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See Sweet's, or Write for Information.

WILLIAMS
EQUIPMENT and SUPPLY CO.
17928 Kinross, Birmingham, Michigan

(Continued from page 90)

▲ **LOUISIANA**—BA 11/14—South Louisiana Turnpike Comn., Donaldsonville,

Donaldsonville—constr. large thruway 68.4 mi. and 25 mi. consisting of bridges and 18 mi. four-lane trestle across the Atchafalaya Basin. Plans deposit $1,000. Extended date, Wayne Palmer, National Bank of Commerce Bldg., New Orleans, engr. CD 8/24.

† **La., New Orleans**—RESERVE HANGAR—BA 11/14—Officer in Charge of Constr., Eighth Naval Dist., Bldg. 16, U. S. Naval Station, air force reserve hangar leantos U. S. Naval Air Station, (formerly Joint Air Reserve Training Center), Alvin Callender Field, (Belle Chasse), NBy 1074, Spec. 1074/56.

† **S. C., Charleston**—INTERCOMMUNICATION SYSTEM—BA 11/20—Dist. P. Wks. Office, Building No. 12, U. S. Naval Base, Charleston, intercommunication sys. for Building No. 13, U. S. Naval Base, NBy-8658, Spec. 8658/56. Plans deposit $10.

HEAVY CONSTRUCTION—LB & CA

▲ **VIRGINIA**—The Richmond-Petersburg Turnpike Auth., 1015 E. Main St. or P.O. Box 1-R, Richmond,

Blythe Bros. Co., P.O. Box 989, Charlotte, N. C. CA $2,208,049, Alt. Contr. No. D-2-G, Sect. D, grading, drainage, paving and structures from point 5,100 ft. south of Swift Creek to point 1,800 ft. north of Rte. 10, Chesterfield Co. Bid Sept. 27. CD 10/2, under LB.

▲ **VIRGINIA**—The Richmond-Petersburg Turnpike Auth., 1015 E. Main St. or P.O. Box 1-R, Richmond,

Wiley N. Jackson Co., P.O. Box 1408, Roanoke, Va., CA $2,712,175, Alt. A, Contr. No. A-2-G, Sect. A, grading, drainage, paving and structures approx. 0.41 mi. from Franklin St. to 13 St., City of Richmond. Bids Sept. 27. CD 10/2, under LB.

▲† **W. Harley Miller, Inc.**, 132 S. Queen St., Martinsburg, W. Va., CA, $1,407,681. fuel storage facilities, Air National Guard, Martinsburg Municipal Airport, ENG-46-022-57-4, MARTINSBURG, W. VA. U. S. Eng., 237 Fourth Ave., Huntington, W. Va. Bids Aug 22. CD 9/26, under LB.

NORTH CAROLINA—State Hy. & P. Wks. Comn., Raleigh,

Nello L. Teer Co., Trust Bldg., Durham, N. C. CA $620,529, est. $400,000-$500,000. CABC, b. conc. binder and surf. 6.2 mi. Proj. 2153, Craven Co. Bids Sept. 25, awarded Oct. 11. CD 9/28, under LB.

SOUTH CAROLINA—State Hy. Dpt., Hotel Columbia, Columbia,

F. A. Triplett, Inc. & James T. Triplett, Inc., P. O. Box 297, Chester, S. C., CA, $670,439. 1,110 ft. rein.-con., structural steel bridge over Waccamaw River, U. S. Rte. 501 near Conway, S. C. Docket 26.343, F. A. Proj. FU-7 (4), Horry Co. Bids Sept. 18, awarded Sept. 28. CD 9/24, under LB.

▲ **FLORIDA**—State Road Dpt., Tallahassee,

Fla.—**Smith Eng. & Constr. Co.**, Drawer 1831, Pensacola, Fla., LB $548,495 (4 bidders) East and West approaches for Apalachicola River Bridge 0.474 mi. F-006-3 (5), Jobs 5302-209 and 5001-204, SR 10, Jackson and Gadsden Counties

Fla.—**Duval Eng. & Contr. Co.**, Box 1588, Jacksonville, Fla., LB $483,514 (4 bidders) Trout River Bridge and approaches 0.605 mi. SR 115, Job 7215-110, Duval Co.;

Fla.—**Ryan Constr. Co.**, Rt. 5, Box 264-B, Tampa 4, Fla., LB $78,083 (4 bidders walkways on bridges Job 9002-152, 9003-150 and 9005-150, SR 5, Monroe Co. Bids Oct. 11. CD 9/27.

▲ **FLORIDA**—State Road Dpt., Tallahassee,

Fla.—**J. W. Conner & Sons, Inc.**, Box 2522, Tampa, Fla., LB $143,462 (5 bidders) limerock base, b. conc. surf., drainage structures 3.301 mi. Jobs 0962-152 and 0966-152, Highlands Co.;

Fla.—**Brinson-Allen Constr. Co.**, Box 1456, Tampa 1, Fla., LB $719,242 (5 bidders) limerock base with surf., b. conc. surf. course, wid'n. existing bridges, 6.662 mi. SR 90, F-012-2 (5) Job 0304-203, Collier Co.; LB $332,468 (8 bidders) heavy excav., limerock base with b. conc. binder course, drainage structures 4.727 mi. SR 43, S-302 (4), Job 1302-203, Manatee Co.;

Fla.—**Duval Eng. & Constr. Co.**, Box 1588, Jacksonville, Fla., LB $206,518 (1 bidder) limerock base surf. tr., b. conc. 4.438 mi. SR 207 and 13, Job 7805-178, St. Johns Co.; LB $125,253 (5 bidders) b. conc. 11.432 mi. SR 5, Job 7301-80, Flagler Co.;

Fla.—**C. A. Scott Constr. Co. and Faulk & Coleman Constr. Co.**, P.O. Box 938, Tallahassee, Fla., LB $1,154,104 (11 bidders) limerock, base, b. conc., conc. box culverts, twin bridges, conc. sheet pile bulkheads, 5.078 mi. SR 5, Job 7901-175, Volusia Co.;

Fla.—**Ronlee, Inc.**, 3907 N.W. 27 Ave., Miami, Fla., LB $258,924 (4 bidders) shaping, compacting base, surf. 3.91 mi. Job 905-3153, Job 9053-154, Job 9055-152, Job 9060-150, all Monroe Co.;

Fla.—**W. L. Cobb Constr. Co.**, Box 977, Tampa, Fla., LB $842,061 (7 bidders), limerock base with b. conc. binder course, 266 ft. double overpass bridges, double underpass bridge, double grade separation over county road, drainage structures SR 500, FG-002-1 (5), F 002-1 (6), Jobs 7520-301, 7502-206 and 7702-202, Orange and Seminole Counties;

Fla.—**White Constr. Co.**, Box 73, Chiefland, Fla., LB $931,075 (10 bidders) limerock base, rework, wid'n. existing base, b. conc. surf. course, binder course, drainage structures 6.909 mi. SR 20 and 57, F-016-2 Indianapolis, Ind. Bids Sept. 27. Pierce, Gruber & Beam, Inc., 518 N. Delaware St., Indianapolis, Ind., engr. CD 8/27.

L. R. Foy Constr. Co., Hutchinson, Kan. LB $375,742. general constr., ARMORY and VEHICLE STORAGE BLDG., HUTCHINSON, KAN. State Dpt. Admin. and Kansas National Guard, State House, Topeka, Kan. (14) and F-032-1 (3) Jobs 5402-204, 5403-202, Jefferson Counties;

Fla.—**Noonan Constr. Co.**, Drawer 470, Pensacola, Fla., LB $245,315 (4 bidders) medium excav., sand-clay base, surf., lengthening existing bridge over Pine Barren Creek, 8.835 mi. SR S-164, Job 4867-150, Escambia Co.;

Fla.—**Doyle Pope**, Quincy, Fla., LB $93,776 (5 bidders) sand-clay base with bit. surf., small drainage structure 4.107 mi. SR S-270, Job 5064-150, Gadsden Co.;

Fla.—**Coggin & Deermont**, Chipley, Fla., LB $136,934 (3 bidders) stab. base with bit. 160 ft. bridge, 3.552 mi. SR S-83-A, Job 6059-150, Walton Co.;

Fla.—**Central Florida Constr. Co.**, Box 245, Riviera Beach, Fla., LB $2,346,521 (7 bidders) c. conc., limerock base with bit. limerock base with b. conc., double overpass bridges, 3 double grade separation bridges, drainage structures, 4.754 mi. SR 600, IN-104-1 (2), Job 1019-202, Hillsborough Co. Bids Oct. 11. CD 9/27.

Ronlee, Inc., 3907 N.W. 27 Ave., Miami, Fla. CA, $539,987, taxiways, taxiway lighting, underground electric duct, Miami International Airport, MIAMI, FLA. Bd. Comrs. Dade Co., Court House, Miami, Fla. Bids Oct. 2. CD 10/10, under LB.

ALABAMA—State Hy. Dpt., Montgomery,

Ala.—**M. H. Rowell**, P. O. Box 458, Guin, Ala., LB $92,085. wid'n. bridges 0.019 mi. over Louis Creek in Winfield and Mill Creek, U. S. 43, south of Winfield, Proposal B, F-115 (5) and 437 (3), Marion Co.;

Ala.—**Hewitt Contg. Co.**, P. O. Box 1372, Columbus, Ga., LB $237,478, Coosa River Bridge approaches 1.136 mi. FAS-183 (1), Coosa and Chilton Counties;

Ala.—**Newell Brothers Constr. Co.**, Hope Hull, Ala., LB $75,169, Proposal "B" bridges 14.536 mi. FAS-772 (1), Perry Co. Bids Oct. 5. CD 9/25.

▲ **ALABAMA**—State Hy. Dpt., Montgomery,

Ala.—**M & W Constr. Co.**, P. O. Box 388, Tupelo, Miss., LB $452,028, grading, drainage, 2.372 27 mi. Ala. 112, U-236 (5) and F-236 (5), Marshall Co.;

Ala.—**S. T. Newsom**, 1067 Magnolia Curve, Montgomery, Ala., LB $301,214, bit. 4.298 mi. F-281 (2), Elmore Co.;

Ala.—**L. J. Cousins**, 56 S. Lewis St., Montgomery, Ala., LB $165,819, grading, drainage 4.016 mi. relocation of U. S. 43, F-300 (7), Clarke Co.;

Ala.—**Couch Constr. Co.**, P. O. Box 59, Dothan, Ala., LB $633,524, bit. 4.928 mi. U. S. 231, U-383 (2), Houston Co.;

Ala.—**Walters Constr. Co., Inc.**, West Love St., Troy, Ala., LB $89,550 bit. 4.034 mi. U. S. 80 FAS-581 (2), Lowndes Co.;

Ala.—**M. A. Evans Constr. Co.**, Rt. 1, Box 82, Wetumpka, Ala., LB $187,589. base, bit. 8.574 mi. U. S. and S-759 (1), Cullman Co.;

Ala.—**Walker Constr. Co.**, Rte. 8, Cullman, Ala., LB $307,490, grading, drainage 10.368 mi. U. S. and S-764 (1), Marshall Co.;

Ala.—**Raley Contg. Co., Inc.**, P. O. Box 156, Aberdeen, Miss., LB $228,876, grading, drainage, bridges 14.536 mi. FAS-772 (1), Perry Co.;

Ala.—**McDowell & McDowell**, P. O. Box 1144, Nashville, Tenn., LB $168,211, bit. 5.813 mi. FAS-822 (1) and SACP-287-A & B, Etowah Co.;

Ala.—**Walton Constr. Co., Inc.**, P. O. Box 863, Mobile, Ala., LB $88,126, bit. 3.69 mi. SACP-6176-A, Monroe Co. Bids Oct. 5. CD 9/25.

▲ **Codell Constr. Co.**, Winchester, Ky. and **Oman Constr. Co.**, Acklen Park, Nashville, Tenn., CA, $2,100,000. grading, drainage work for new freight yards, BIRMINGHAM, ALA. Louisville & Nashville R.R. Co., L. L. Adams, ch. engr., 9 St. and Broadway, Louisville 1, Ky. Awarded Oct. 10. CD 9/2/54.

Forcum-Lannom & Co., 4300 Wells Station Rd., Memphis, Tenn., LB $652,195, interceptor sewer from Illinois Central R.R. tracks on May St. pumping station, MEMPHIS, TENN. City Comn., City Hall, Memphis, Tenn. Bids Oct. 9. CD 9/16/54.

† **Catlett Constr. Co., Inc.**, 3601 Chapman Hy. S.W., Knoxville, Tenn., CA, $594,403. three MOTOR VEHICLE REPAIR SHOPS; MESS HALL, 2 PAINT and OIL STORAGE BLDGS., motor vehicle compound as anti-aircraft facilities, ENG-40-058-57-6, OAK RIDGE, TENN. U. S. Eng., 306 Federal Office Bldg., Nashville, Tenn. Bids Sept. 12, awarded Oct. 3. CD 10/5, under LB.

BUILDINGS—LB & CA

W. B. Johns Constr. Co., 304 W. 7 St., Tifton, Ga., LB $992,905. Cook High SCHOOL addn. (white) Cook County Training SCHOOL (colored); Adel Elementary SCHOOL (white) Sparks Elementary SCHOOL (white) Lenox Elementary SCHOOL addn. (white) Adel Elementary PHYSICAL EDUCATION BLDG. addn. (white) Sparks Elementary PHYSICAL EDUCATION BLDG. addn. (white) ADEL, GA. Georgia State School Bldg. Auth., 244 Washington St., Atlanta, Ga. Bids Oct. 9. CD 9/10.

▲ **Ruscon Constr. Co.**, 1508 Prudential Bldg., Jacksonville, Fla., LB $1,085,971. women's DORMITORY, University of Florida, GAINESVILLE, FLA. State Bd. Control, Administration Bldg., University of Florida, Gainesville, Fla. Bids Oct. 10. CD 9/27.

▲ **Frank J. Rooney, Inc.**, 5880 N.E. 4 Ave., Miami, Fla., CA, $1,697,878, RETAIL STORE, Comanche Ave. between 20 and 22 Aves., TAMPA, FLA. Sears, Roebuck & Co., Mr. Emory Williams, property mgr., 675 Ponce de Leon Ave., Atlanta, Ga. Bids Sept. 26, awarded Oct. 8. CD 10/3, under LB.

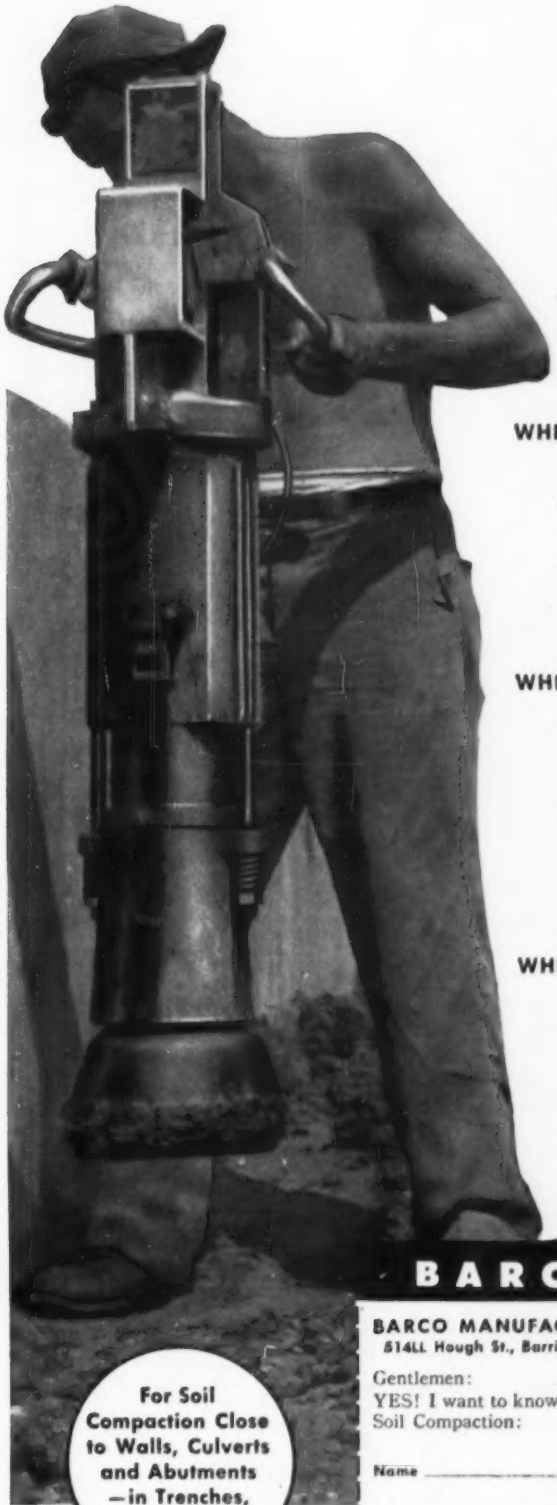
Perrilliat-Rickey Constr. Co., 1530 S. Rendon St., New Orleans, La. CA $516,200. men's DORMITORY, LAKE CHARLES, LA. McNeese State College, W. N. Cusic, Lake Charles, La., and State Bd. Educ., State Capitol, Baton Rouge, La. CD 9/25, under LB.

▲ **Wigton-Abbott Corp.**, 1225 South Ave., Plainfield, N. J. CA Est. $2,500,000. MFG. PLANT for chemicals, CALVERT CITY, KY. B. F. Goodrich Chemical Co., Calvert City, Ky.

▲ **Whittenberg Constr. Co.**, 2214 S. Floyd St., Louisville, Ky. Owner Builds. $2,900,000. 270 HOUSES, Bon Air Estates Subdivision, LOUISVILLE, KY. E. W. Augustus, 317 Wallace Ave., St. Matthews, Ky., archt.

(Continued on page 94)

WHEN CONSTRUCTION JOBS CALL FOR SOIL COMPACTION



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☐ Please send General Catalog No. 621.

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(Continued from page 92)

MIDDLE WEST

HEAVY CONSTRUCTION—BA

Wis., **Wauwatosa**—BA 11/1—City, City Hall, sanitary sewers in 18 states, F. Kuckuck, city engr. CD 4/25.

† **Illinois**—BA 11/5—U. S. Eng., 420 Locust St., St. Louis 2, Mo., road surf. on levees, Clear Creek Drainage & Levee District, Proj. Item IV-G, Union and Alexander Counties, CIVENG-23-065-57-31. CD 11/9.

BUILDINGS—BA

Mich., **Detroit**—REFRIGERATION—BA 10/30—City, K. T. Keller, pres. Arts Comn., City-County Bldg., 1 story, rein.-con., stone refrigeration bldg., Detroit Institute Fine Arts Proj. Plans deposit $25, refundable. Suren Pilafian, 153 E. Elizabeth St., Detroit, archt. Hyde & Bobbio, Inc., 320 W. Lafayette Blvd., engrs. CD 1/26.

Mich., **Ypsilanti**—APARTMENTS—BA 10/30—State, Clair L. Taylor, secy. State Bd. Educ., Capitol Bldg., Lansing, Group 2, married student apartments, Eastern Michigan College. Plans deposit $25, refundable. Ralph R. Calder, 1212 Kales Bldg., Detroit, Zone 26, archt.

Wis., **Green Bay**—FACTORY—BA 11/1—Bay West Paper Co., 1100 W. Mason St., 1 story, 124x260 ft. concrete, steel, brick factory addn. Plans deposit $25. John E. Somerville, 403 W. Walnut St., engr.

Wis., **Madison**—GENETICS, etc.—BA 11/1—University of Wisconsin, 1 story, part bsmnt., 52x180 ft. genetics bldg., 1 story, 43x181 ft. poultry and 4 bldgs. 32x100 ft. and 1 bldg. 20x170 ft. Plans deposit $30. Law, Law, Potter & Mystrom, 121 S. Pinckney St., engrs.

O., **Bucyrus**—SCHOOLS—BA 11/8—Bd. Educ., Bucyrus, new Lincoln Grade School and Crawford and Norton Schools addns. $800,000. McLaughlin & Keil, 500 Dominion Bldg., Lima, archts. CD 11/15.

▲ Ind., **Lawrenceburg**—HOSPITAL—BA 11/9—Dearborn County Hospital Bd. Trustees, Lawrenceburg, 2 story, L-shaped, 250x45x150 ft., brick, stone 46,000 sq. ft. Dearborn County Memorial Hospital $1,263,233. Plans deposit $25. McGuire & Shook, 1401 Fletcher Trust Bldg., Indianapolis, archts. J. R. Rotz Eng. Co., 1919 Meridian St., Indianapolis, engr. CD 12/5/46.

HEAVY CONSTRUCTION—LB & CA

OHIO—State Hy. Dpt., Columbus,
rejected bids Oct. 2, Type T-35 2.778 mi., S.R. 94, Sects. (11.28-12.16) (12.59-13.62), Baughman, East Union, Green and Sugar Creek Twps. and city of Orrville, Wayne Co. LB $281,060. CD 10/9, under LB.

▲ OHIO—State Hy. Dpt., Columbus,
V. N. **Holderman & Sons, Inc.**, 890 Oakland Park Ave., Columbus, O. CA $4,766,312, est. $5,046,000. Type T-71 and structures 5.578 mi. U.S.R. 30R, Sect. 3.00, Madison Twp. and city of Mansfield, Richland Co.;

O.—**Hatcher Brothers, Inc.**, 116 Schoolway, Mingo Junction, O. CA $307,377, est. $316,900. Type T-35 on B-119, 0.982 mi., S.R. 164, Sect. (10.46-10.65) (15.53-15.68) S.R. 518 Sect. 9.02, Columbiana Co. CD 10/9, under LB.

▲ **American Constr. Co.**, 4100 Brookpark Rd., Cleveland 29, O. CA $1,085,000, est. $1,100,000. Lakefront Parking lot imprvt., 1¼ acre sect., CLEVELAND, O. City, Dpt. P. Safety, Robert J. Kelly, comm., City Hall, Cleveland 14, O. Bids Oct. 4, awarded Oct. 10. CD 10/10, under LB.

† **Launder & Son, Inc.**, Glendale Ave. and Toledo Terminal R.R., Toledo, O. CA $893,447. runway extens., Air National Guard at Toledo Express Airport, ENG-46-022-57-5, TOLEDO, O. U. S. Eng., 237 Fourth Ave., P. O. Box 2127, Huntington 18, W. Va. CD 9/12, under LB.

▲ **John C. Tully Co.**, 33 N. LaSalle St., Chicago, Ill., CA $1,294,399. auxiliary outlet sewerage sys., Bloomingdale-Sayre, CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids Sept. 7. CD 9/18, under LB.

Downey Heating Co., 1739 W. St. Paul Ave., Milwaukee, Wis., CA $54,797 pumping equipment, SOUTH MILWAUKEE, WIS. City, City Hall, South Milwaukee, Wis. Bids Sept. 25. CD 9/19.

▲ MICHIGAN—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,
Mich.—**Louis Caravaglia**, 24240 Mound Rd., Center Line, Mich. and **Julius Porath & Son**, 432 Lafayette St., Detroit, Mich. CA $2,191,924, est. $2,530,000. dual 24 ft. c. conc. 2.189 mi., three bridges on Detroit-Toledo Expressway, I 58151 C1-RN (SP 58-6) (I 05-12), Monroe Co.;

Mich.—**Holloway Constr. Co.**, Livonia, Mich. CA $1,474,000, est. $1,700,000. dual 24 ft. c. conc. 5.679 mi. US-16 relocation, M 47064 C1-RN (SP 47-1) I 47064 C2-RN (SP 47-1), etc., Livingston and Oakland Counties. CD 10/10, under LB.

Carvey & Gohr, 1000 Airfield Lane, Midland, Mich. CA $116,266. imprv. streets in Melody Lane subdivision, MIDLAND, MICH. City, City Hall, Midland, Mich. Bids Sept. 5. CD 8/31.

BUILDINGS—LB & CA

▲ **Allan & Beischel Co.**, 3745 Spaeth Ave., Cincinnati, O. CA Est. $2,000,000. central sect. of SEMINARY BLDG. addns., CINCINNATI, O. St. Gregory Seminary, Beechmont Ave., Cincinnati, O. Awarded Oct. 4. CD 9/7.

Eric Damus, 3520 Edwards Rd., Cincinnati, O. Own Forces. $850,000, 60 one story brick, bsmnt. HOMES, Second Sect. Mt. Carmel Heights, off Mt. Carmel Rd., CINCINNATI, O. Nunlist & Frolicher, Traction Bldg., Cincinnati, O., engrs. Awarded Oct. 11.

William Wiechers, 6385 Savannah Ave., Cincinnati, O. Own Forces $360,000. 2 story, bsmnt., brick APARTMENT, Glenway Ave. at Rapid Run, CINCINNATI, O. Wilbur Firth, 7124 Montgomery Rd., Cincinnati, O., archt., awarded Oct. 8.

▲ **E. I. duPont deNemours & Co., Inc.**, duPont Bldg., Wilmington 98, Del. Own Forces. $2,000,000. MYLOR PLANT addn., CIRCLEVILLE, O.

Knowlton Constr. Co., Bellefontaine, O. CA general constr., Catholic HIGH SCHOOL, MARION, O. Grand total Est. $750,000. St. Mary's Church, Marion, O. CD 9/19;
Terry P. Smith, 608 W. High St., Lima, O. plumbing and heating work (Marion, O.);
Cochran Electric Co., Mount Vernon, O. CA electrical work. (Marion, O.).

▲ **Hagerman Constr. Corp.**, 403 Strauss Bldg., Fort Wayne, Ind., CA, $1,280,965, general contract, HIGH SCHOOL with GYMNASIUM, COLUMBIA CITY, IND. Columbia City Joint High School Bldg. Corp., Columbia City, Ind. Bids Sept. 26, awarded Oct. 4. CD 10/9, under LB.

Fred Ganschinietz, 501 N. 18 St., East St. Louis, Ill., CA, Est. $700,000. 2 story, bsmnt., brick, stone, masonry blocks, concrete, steel EDUCATIONAL BLDG. and CHURCH, BELLEVILE, ILL. St. Paul Evangelical & Reformed Church, Rev. Dr. B. J. Koehler, pastor, Ralph E. Fey, chn. Bldg. Com., 111 W. B St., Belleville, Ill. Lyman Weisenstein, Belleville National Bank Bldg., Belleville, Ill., archt.

▲ **W. Thomas Buckley Bldg. Corp.**, 100 N. La Salle St., Chicago, Ill., CA, $4,000,000. SHOPPING CENTER, west of Harlem St. between Foster and Berwyn Ave. CHICAGO, ILL. Harlem-Foster Shopping Center, c/o Mittelbusher & Tourtelot, archts., 36 S. State St., Chicago, Ill.

K. F. Sullivan Co., 25 N. Orchard St., Madison, Wis., CA $522,785, general contract, 3 story DORMITORY, MADISON, WIS. Edgewood College, 1000 Edgewood Ave., Madison, Wis., Siberz, Purcell & Cuthbert, 1920 Monroe St., Madison, Wis., archts.

Hogden & Mikkelson, Westby, Wis., LB $221,997 1 story, 60x220 ft., REA POWER SERVICE BLDG., WESTBY, WIS. Vernon Electric Co-operative, N. E. Lefler, mgr., Westby, Wis. Bids Oct. 2. CD 9/19.

Peerless Cement Corp., 144 Free Press Bldg., Detroit, Mich. Owner Builds. $630,000. ROCK STORAGE FACILITY, incl. slab work, piling and retaining walls, 9785 Brennan St., DETROIT, MICH.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **Nebraska**—BA 10/31—Soil Conservation Service, 134 S. 12th St., Lincoln, stabilization dam, Upper Salt Creek Watershed, near Princeton, Lancaster Co. No. 10-NB-57.

Neb., Omaha—CIRCUIT BREAKERS—BA 10/31—Omaha Public Power Dist., 17 and Harney Sts., Omaha, Contr. No. 365, purchase oil circuit breakers for various points. A. G. Johnson, c/o owner, ch. engr. CD 8/17/51, under Public Buildings.

Okla., Oklahoma City—AIR TRAFFIC CONTROL BLDG.—BA 11/2—Oklahoma City Airport Trust, Oklahoma City, air traffic control bldg. Will Rogers Airport. $500,000. Plans deposit $100. Hudgins, Thompson & Ball, 1411 Classen St., engrs. CD 3/27.

Iowa, Lamoni—GAS DISTRIBUTION SYSTEM—BA 11/9—City, City Hall, gas distr. sys. $175,000. Henningson, Durham & Richardson, Inc., 2962 Harney St., Omaha, Neb., engr.

† **South Dakota**—BA 11/9—U. S. Eng., 1709 Jackson St., Omaha, Neb., electric work shop, power plant Ft. Randall Dam and Reservoir Proj. near Pickstown, Inv. 25-066-57-37. CD 9/14, under LB.

† **Montana**—BA 11/27—Bureau Reclamation, Dpt. Interior, Government Camp, Canyon Ferry, furnishing labor and materials for Helena Valley Tunnel and Canal, Station 3 plus 14.30 to Station 149 plus 00, Helena-Great Falls Division, Missouri River Basin Proj., near Helena; adv. ENR 10/25. CD 9/7.

† **Montana**—BA 12/4—Bureau Reclamation, Dpt. Interior, Government Camp, Canyon Ferry, furnishing labor and materials for Helena Valley pumping plant, Helena-Great Falls Division, Missouri River Basin Proj., near Helena, Spec. DC-4783; adv. ENR 10/25.

▲† **N. M., Clovis**—DINING HALLS, etc.—BA 12/4—U. S. Eng., P.O. Box 1538, Albuquerque, dining halls and dormitories, airmen, Clovis Air Force Base, ENG-29-005-57-6. $1,000,000-$5,000,000. CD 10/11.

† **North Dakota**—AUTOTRANSFORMER—BA 12/4—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars West Fargo, one 25,000/33,333/41,667 kva outdoor autotransformer Fargo Sub-station, Transmission Division, Missouri River Basin Proj., Inv. DS-4776.

BUILDINGS—BA

Tex., Fort Worth—SCHOOL—BA 11/7—Fort Worth Public Schools, Ed. P. Williams, bus. mgr., 3210 W. Lancaster St., 1 story, brick, tile, concrete Greenbriar Elementary School, 5717 James St. $507,000. Plans deposit $25. Wilson, Patterson & Assocs., 601 Bailey St., archts. CD 5/2.

HEAVY CONSTRUCTION—LB & CA

Commonwealth Electric Co., 1901 Y St., Lincoln, Neb. CA $176,200. power wiring and lighting, FREMONT, NEB. City, Fremont, Neb. Bids Sept. 18. CD 9/11.

Denton Constr. Co., 7734 E. Admiral Pl., Tulsa, Okla. CA $341,776. Sect. 1, Mingo Sewage Force Main, Contr. SA-55-8, TULSA, OKLA. City, City Hall, Oklahoma City, Okla. CD 10/10, under LB.

Rio Grande Electric Co-operative, Brackettville, Tex., Owner builds. $90,000. some rural distr. lines, Brackettville, TEXAS. CD 4/11.

▲ **TEXAS**—State Hy. Comn., Austin,
Austin Bridge & Austin Road Co., P. O. Box 1590, Dallas 1, Tex., CA $1,261,652, grading, storm sewers c. conc. 0.681 mi. Hy. U. S. 67 and 77, Proj. I-288 (7) Dallas Co. Bids Sept. 11, awarded Sept. 19. CD 9/17, under LB.

▲ **TEXAS**—State Hy. Comn., Austin,
Harry Campbell, Rt. 5, Box 68-A, Abilene, Tex. CA $1,164,183. flex. base hot mix b. conc. 13.074 mi. Hy. U. S. 67 and 377, Proj. F-83 (3) Brown Co. Bids Sept. 12, awarded Sept. 19. CD 9/17, under LB.

F. S. Oldt Co., 403 S. Haskell St., Dallas, Tex. LB $85,437. Contract 1, 36 in. outfall sewer, ABILENE, TEX. City, City Hall, Abilene, Tex. Bids Oct. 5. CD 9/24;
R. B. Hodgson Co., Box 1651, Lubbock, Tex. LB $246,480. Contract 2, pressure sewer (Abilene, Tex.).

▲ **C. H. Leavell & Co.**, 1900 Wyoming St., El Paso, Tex., LB $4,101,800 (A); $4,103,800 (A-1a); $4,102,800 (A-1b); $4,091,800 (B); $4,093,800 (B-1a); $4,092,800 (B-1b), South Holly filtration plant and pumping station, FORT WORTH, TEX. City, Dr. Jack Garrison, mayor, City Hall, Fort Worth, Tex. Bids Oct. 11. CD 10/3.

▲ **Panhandle Constr. Co.**, Box 1500, Lubbock, Tex. CA, $1,009,603. sanitary sewer lines and mains, SNYDER, TEX. City, City Hall, Snyder, Tex. CD 10/12, under LB.

El Paso Natural Gas Co., El Paso, Tex. Force Account. $500,000. reconditioning 200 mi. 16 in. gas carrier line, Jal to area of Midland, Tex., NEW MEXICO. CD 10/10.

BUILDINGS—LB & CA

▲ **Fluor Corp. Ltd.**, 2500 Atlantic St., Los Angeles, Calif. CA Approx. $1,000,000. design and construct CATALYTIC DESULFURIZATION UNIT at Pine Bend, ST. PAUL, MINN. Great Northern Oil Co., W. First National Bank Bldg., St. Paul, Minn.

Betts & Beer Constr. Co., Adair, Iowa. CA, $122,000. WAREHOUSE and SUPPLY BUILDING, State Mental Health Institute, CLARINDA, IOWA. State Bd. Control, State Office Bldg., Des Moines, Iowa. Bids Sept. 12.

▲ **E. I. du Pont de Nemours & Co., Inc.**, duPont Bldg., Wilmington 98, Del. Own Forces. Est. $2,000,000. cellophane PLANT addn., CLINTON, IOWA.

D. C. Bass & Sons, Bass Bldg., Enid, Okla. LB $412,948, est. $400,000. SCIENCE HALL at Panhandle A & M College, GOODWELL, OKLA. A & M College, Capitol, Oklahoma City, Okla. Sorey, Hill & Sorey, 809 N.W. 36 St., Oklahoma City, Okla., archts.

Henry Carlson Co., 416 S. 2 St., Sioux Falls, S. D., CA $774,650, general constr. Patrick Henry JUNIOR HIGH SCHOOL, SIOUX FALLS, S. D. Bd. Educ., 107 High School Bldg., Sioux Falls, S. D. Bids Oct. 2. CD 9/14.

▲ **J. E. Dunn Constr. Co.**, 929 Holmes St., Kansas City, Mo. CA $1,379,000, est. $1,500,000. 4 story addn. to existing 3 story HOSPITAL, remodeling 3 story BLDG., 7 story addn. and new CHAPEL, KANSAS CITY, KAN. Providence Hospital, 18 and Barnett Sts., Kansas City, Kan. Bids Oct. 8. CD 9/18.

▲ **J. J. Ballinger Co.**, Braniff Bldg., Oklahoma City, Okla., CA $1,283,955, est. $1,300,000. John Marshall HIGH SCHOOL, OKLAHOMA CITY, OKLA. Bd. Educ., 900 N. Klein St., Oklahoma City, Okla. Bids Oct. 11, awarded Oct. 12. CD 9/26.

Jules Herlong, 6256 Lumpton St., Dallas, Tex., Purchase and Hire, $350,000, 7 DWELLINGS; $365,500, 10 DWELLINGS, DALLAS, TEX. CD 10/2.

▲ **Thomas S. Byrne, Inc.**, Fort Worth Natl. Bank Bldg., Fort Worth, Tex., CA $1,000,000. 1 and 2 story, brick, tile, concrete STEWARDESSES COLLEGE, incl. swimming pool, FORT WORTH, TEX. American Airlines, c/o Amon Carter Airfield, Fort Worth, Tex. CD 9/14.

Paschal-Sanders, 3602 Linden St., Fort Worth, Tex. CA $537,750, general contract PUBLIC HEALTH CENTER, FORT WORTH, TEX. City, Dr. Jack Garrison, mayor, and Tarrant Co., Gus Brown, co. judge, City Hall, Fort Worth, Tex. Bids Oct. 4. CD 10/15, under LB.

Alan B. Huvard, 10915 Willowisp St., Houston, Tex., Purchase and Hire, $365,000, 15 DWELLINGS; $345,000, 12 DWELLINGS, HOUSTON, TEX. CD 9/28.

Rob. Jones, 2021 Le Roy St., Houston, Tex., Purchase and Hire. $375,665. 20 DWELLINGS, HOUSTON, TEX. CD 9/28.

P. S. Luttrell, Builder, 3205 N. Shepherd St., Houston, Tex., Purchase and Hire, $351,190, 23 DWELLINGS; $369,900, 29 DWELLINGS, HOUSTON, TEX. CD 9/25.

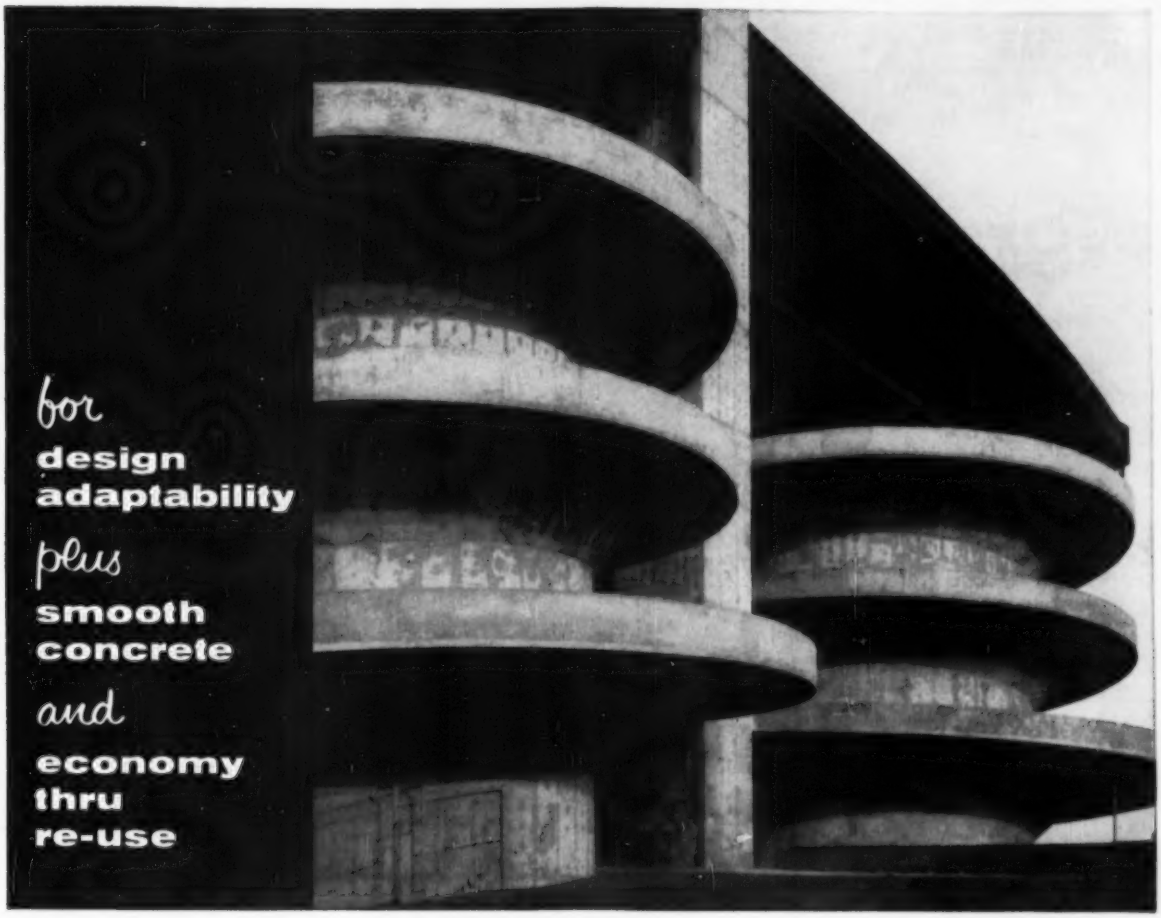
Bill Williams Constr. Co., 2310 N. Wayside St., Houston, Tex., Own Forces. $353,360. 33 DWELLINGS, HOUSTON, TEX. CD 9/25.

T. A. Robinson Jr. & Assocs., 510 Taft St., Houston, Tex., Owner Builds, $371,400, 20 DWELLINGS; $360,000, 18 DWELLINGS, HOUSTON, TEX. CD 10/2.

H. B. Zachry Co. Constr. Div., W. Harding Blvd., San Antonio, Tex., CA, $375,000, 30 DWELLINGS; $361,500, 28 DWELLINGS, SAN ANTONIO, TEX. H. B. Zachry Properties, Inc., 310 S. St. Mary's St., San Antonio, Tex. CD 9/13.

▲ **Phil S. Hardy Constr. Co.**, Texarkana, Tex., CA, $1,523,306, general contract 5 story, bsmnt., brick, concrete frame HOSPITAL, TEXARKANA, TEX. Wad-

(Continued on page 96)



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INTERIOR PLYFORM®—standard concrete form grade made with moisture-resistant glue. Gives up to 10 re-uses.

EXTERIOR PLYFORM®—standard form grade made with waterproof glue. Can be re-used as many as 25 times.

***OVERLAID FIR PLYWOOD**—special panel with hard, glossy fused resin-fiber surfaces. Waterproof glue. Gives up to 200 re-uses.

(Continued from page 94)

ley Memorial Hospital, Texarkana, Tex. Bids Sept. 6. CD 8/28;

Plumbing Enterprise, Inc., 710 Nueces St., Houston, Tex., CA, **$724,282**, plumbing, heating and air-conditioning for hospital (Texarkana, Tex.).

FAR WEST

BUILDINGS—BA

▲† **Idaho, Arco**—BUILDINGS, etc.—BA 11/17—Atomic Energy Comn., Idaho Operations Office, Idaho Falls, building, utilities, other facilities in SPERT area, III at National Reactor Testing Station, Proj. AT (10-1)-849, $1,000,000. CD 9/19.

HEAVY CONSTRUCTION—LB & CA

State Wide Plumbing & Heating Co., 4474 S. Main St., Salt Lake City, Utah, LB **$205,092**. Sect. 4, sanitary sewer, LAYTON, UTAH, North Davis Sewer Dist., Ray J. Dawson, pres. Layton, Utah. Bids Oct. 1. Templeton & Linke, 500 Dooly Bldg., Salt Lake City, Utah, engrs.

▲† **W. W. Clyde**, Springville, Utah, LB **$1,011,819**. earthwork, culverts for access highway, Glen Canyon Dam road, Colorado River Storage Proj.; Spec. DC 4756, ARIZONA and UTAH. Bureau Reclamation, Dpt. Interior, Kanab, Utah. Bids Oct. 9. CD 8/31.

WASHINGTON—State Hy. Comn., Olympia, Wash.—**Hannan Bros. Co.**, 715 S. W. King Ave., Portland, Ore., LB **$93,913** (4 bidders) rein.-conc. slab bridge over La Camas Creek, incl. approaches 0.315 mi. FAS S-0269 (2), Clark Co.;

Wash.—**P. Jarvis, Inc.**, 1070 W. Ewing St., Seattle, Wash., LB **$211,861** (8 bidders) steel plate girder railway bridge for N.P. Ry. undercrossing at Crocker, incl. 0.297 mi. Sec. State Hy. 9-F, FAS SG-0239 (2), Pierce Co. Bids Oct. 9. CD 9/27.

▲ **WASHINGTON**—State Hy. Comn., Olympia, Wash.—**Bocek Brothers**, Hoquiam, Wash., LB **$557,392** (3 bidders) clearing, draining, grading, surf. 5.528 mi. Secondary State Hy. 13-A, FAS S-0453 (4), Pacific Co.;

Wash.—**N. McDougall Co.**, Pittock Block, Portland, Ore., LB **$277,890** (8 bidders) bit. surf. 2.372 mi. Primary State Hy. 3, F-040-1 (1), Garfield Co.;

Wash.—**S. S. Mullen, Inc.**, 621 9 Ave. N Seattle, Wash., LB **$311,235** (4 bidders) bit. surf., b. conc. paving, rein.-conc. flat slab bridge 3.069 mi. Primary State Hy. 2, IN-002-1 (14), King Co. Bids Oct. 9. CD 9/27.

† **Imhoff & Johnson**, Buckley, Wash., LB **$54,235**, est. $47,191 (2 bidders) clearing, grubbing, installing 760 ft. 36 in. rein.-conc. drain pipe, channel excav., drainage structures, American Lake outlet, CIVENG-45-108-57-23, FORT LEWIS, WASH. U. S. Eng. 4735 E. Marginal Way, Seattle 4, Wash. Bids Oct. 9. CD 9/26.

Leavitt, Chandler & Co., Bellevue, Wash., LB **$400,000** (7 bidders) constr. foundations for hangar, MOSES LAKE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle 4, Wash. Bids Oct. 9. CD 9/19.

Enger Bros., 620 S. Hall St., Beaverton, Ore. LB **$251,892** (9 bidders) swimming pool, BEAVERTON, ORE. Tualatin Hills Park & Recreation Dist., Beaverton, Ore. Bids Oct. 5. CD 9/20.

▲ **Morrison-Knudsen Co.**, 319 Broadway Ave., Boise, Idaho, **Henry J. Kaiser Co.**, 1924 Broadway, Oakland 12, Calif., **Macco Corp.**, 14409 Paramount Blvd., Paramount, Calif., **B. Perini & Sons, Inc.**, 73 Montwait St., Framingham, Mass. CA, Total est. **$80,000,000**. tunnel and Haas underground power house on north fork of Kings River, Fresno Co., CALIFORNIA. Pacific Gas & Electric Co., 245 Market St., San Francisco 6, Calif. CD 11/9.

M.G.M. Constr. Co., Concord, Calif., CA **$588,999**. 24 mi. 6 in. natural gas pipe line from San Ardo oil field to King City crossing Salinas River with pressure control station, with addnl. line at Salinas, Abbot and Griffin, CALIFORNIA. Pacific Gas & Electric Co., 245 Market St., San Francisco, Calif. CD 7/21/52.

BUILDINGS—LB & CA

Palmer-Christiansen, 233 W. 13 St. S., Salt Lake City, Utah, CA **$384,840**, mechanical work for OFFICE, SALT LAKE CITY, UTAH. Mountain Fuel Supply Co., 36 S. State St., Salt Lake City, Utah. Bids Sept. 27. Hudgson & Holbrook, 807 Eccles Bldg., Ogden, Utah, archts. CD 1/30.

▲ **A. J. Nutzke**, 20252 E. Chapman St., Orange, Calif., CA **$1,320,000**. 110 frame, stucco DWELLINGS, Tract 2464, GARDEN GROVE, CALIF. Elhambee Manor, 11146½ E. Whittier Blvd., Whittier, Calif.

▲ **Pacific Gas & Electric Co.**, 245 Market St.; San Francisco, Calif., Own Forces, Total est. **$21,000,000**. Hunters Point STEAM PLANT, SAN FRANCISCO, CALIF. CD 12/7.

M & K Corp., San Francisco Bank Bldg., San Francisco, Calif., CA, foundation work for steam plant (San Francisco, Calif.).

W. H. Christiansen, 18714 Parthenia St., Northridge, Calif. LB **$692,400**, est. $600,000 (6 bidders) Joe Scott Boys CAMP, Capitol Proj. 8406, Sagus, LOS ANGELES, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids Sept. 26. Raphael A. Nicholais, 6239 Wilshire Blvd., Los Angeles, Calif., archt. CD 12/16.

CANADA

HEAVY CONSTRUCTION—BA

Que., Montreal—PARK IMPRVS.—BA 10/31—City, City Hall, grading, sewers, drains, water courses, aluminum fences, concrete ponds, rock work, sidewalks, etc. Zoological Garden, Lafontaine Park, Rachel and Celia-Lavallee Sts. $140,000. Plans deposit $100. McFadzean Everly Ltd., c/o Brouillet & Carmel, 3600 Barclay Ave., landscaping archts. CD 10/3.

▲ **Ontario and New York**—BA 11/13—St. Lawrence Seaway Auth., No. 2 Temporary Bldg., Ottawa, Ont., substructure of $8,000,000 high level suspension bridge crossing the Cornwall Island, South Channel between Cornwall Island, Ontario and Rooseveltown, N. Y. **A. G. Murphy, c/o owner**, 685 Cathcart St., Montreal, Que., ch. engr.

BUILDINGS—BA

N. S., Halifax—MESS—BA 11/1—Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont., Warrant Officers' and Sergeants' Mess, outside services, Army Camp. Over $350,000.

▲ **Ont., Toronto**—HOSPITAL—BA 11/9—Salvation Army of Canada, 20 Albert St., 6 story, bsmnt., T-shaped, 50x133 ft., with 50x80 ft., brick, steel, hospital, Hayden St. $1,600,000. Plans deposit $100. Covan, Ferguson, Lindsay, Kaminker, Langley, Keenleyside, 10 Price St., archts. Ralph C. Manning, 745 Mount Pleasant Rd., engr. CD 5/10/54.

N. S., Sydney—UNEMPLOYMENT—BA 11/14—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., Unemployment Insurance Commission Bldg., George St. $600,000. E. A. Gardner, c/o owner, ch. archt.

▲ **Ont., Brantford**—FEDERAL—BA 11/14—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. two wings, one 2 story bsmnt., and other 3 story, bsmnt., granite base, limestone federal bldg. addns., alterations. $1,800,000. C. H. Brooks, 11 George St., Brantford, archt. CD 8/1/55.

BUILDINGS—SLC

Que., Arvida—HOSPITAL—Saguenay General Hospital Bd. of Governors, soon lets contract, 60 bed hospital, Taschereau Blvd. $400,000. Dunnford, Bolton, Chadwick & Ellwood, 1980 Sherbrooke St. W., Montreal, archts. Wiggs, Walton, Frost & Lindsay, 4350 Sherbrooke St. W., Montreal, engrs.

▲ **Que., Montreal**—PLANT OFFICES—J. W. Gilmour, purch agt. for International Harvester Co. of Canada, Ltd., Sherman Ave. N., Hamilton, Ont., soon lets contract, 1 story, 240x240 ft., timber, brick, concrete block Farm Equipment Office, Devonshire Ave., at Ferrier St. $1,000,000. Kyles & Kyles, 247 John St. S., Hamilton, Ont., archts. Philip F. Goodfellow, 1117 St. Catherine St. W., assoc. archt. CD 9/26.

HEAVY CONSTRUCTION—LB & CA

ONTARIO and MICHIGAN—State Bridge Comn. of Michigan, 1410 Elmwood St., Port Huron, Mich.

Johnson-Turner Electric Repair & Engineering Co. Ltd., 406 N. Front St., Sarnia, Ont., CA, **$103,500**. rehabilitation of electrical system and roadway lighting fixtures of Ontario Section Blue Water Bridge, over St. Clair River between Point Edward, Ont. and Port Huron, Mich. Awarded Oct. 1. McDougall & Friedman, 1235 McGill College Ave., Montreal, Que., engrs.

BUILDINGS—LB & CA

Barclay Constr. Ltd., Box 362, Hamilton, Ont., CA, **$381,826** (4 bidders) SCHOOL, Army Camp, CAMP BORDEN, ONT. Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, Ont. Craig & Madill, 290 Merton St., Toronto, Ont., archts. Flanagan & Black, 3086 Bloor St. W., Toronto, Ont., engrs. Awarded Oct. 3.

▲ **Temiskaming Constr. Ltd.**, Temiskaming, Ont., CA, Est. **$5,000,000**. first phase of FLOTATION PLANT for nickel mine, CHELMSFORD, ONT. Consolidated Sudbury Basin Mines Ltd., 25 King St. W., Toronto, Ont. General Eng. Co. Ltd., 100 Adelaide St. W., Toronto, engrs.;

Vulcan-Ford-Smith Ltd., 132 Jarvis St., Toronto, Ont., CA, Est. **$400,000**. 5½ mi. aerial tramway for nickel mine, incl. bins and towers (Chelmsford, Ont.).

▲ **Pigott Constr. Co., Ltd.**, 1250 Bay St., Toronto, Ont., CA, Est. **$2,000,000**. 80,000 sq. ft. PLANT addn., OSHAWA, ONT. General Motors of Canada Ltd., Oshawa, Ont. Allward & Gouinlock, 57 Bloor St. W., Toronto, Ont., archts. Awarded Oct. 4. CD 10/11.

▲ **Angus Robertson Ltd.**, 57 Bloor St. W., Toronto, Ont., CA, Est. over **$1,000,000**. 1 story, 156,000 sq. ft. WAREHOUSE, 20,000 sq. ft. OFFICE, both steel frame, brick, block, 55-acre site Kipling Ave., TORONTO, ONT. Grand Union-Carroll's Ltd., 76 Biggar Ave., Hamilton, Ont. Bids Sept. 21, awarded Oct. 8. CD 9/14.

Duroc Constr., Inc., 5126 Park Ave., Montreal, Que., CA Est. **$600,000**. 2 story, bsmnt., 125x400 ft. OFFICE and WAREHOUSE, Cremazie Blvd. W. near Esplanade Ave., MONTREAL, QUE. Granger & Freres Ltd., 56 Notre Dame St. W., Montreal, Que. Awarded Oct. 3. CD 9/19.

H. J. O'Connell Ltd., Canada Cement Bldg., Montreal, Que., CA Est. over **$500,000**. explosives PLANT, on 3,400-acre site between town and Moisie River, SEPT ILES, QUE. Canadian Industries Ltd., 1253 McGill College Ave., Montreal, Que. H. W. Humphrey, c/o owner, ch. engr. Awarded Oct. 2. CD 8/10.

ALASKA

HEAVY CONSTRUCTION—LB & CA

† **ALASKA**—Bureau P. Rds., Dpt. Commerce, Federal Bldg., Juneau.

Pacific-Alaska Contractors, Inc., 1515 Center St., Tacoma, Wash., LB **$490,190** (5 bidders) grading, const. structural steel bridges 1.7 mi. Copper River Hy. in Chugach National Forest. Bids Oct. 10. CD 10/5.

PROPOSED PROJECTS

WATER SUPPLY

Fla., Panama City—City of Long Beach, J. E. Churchill, mayor, Long Beach, 119,200 ft. water sys., 150,000 gal. storage tank, 100,000 gal. tank, treatment plant, Panama City, Kiska Beach, **$850,000**. CD 3/30.

▲ **Ga., Atlanta**—City of Atlanta and Fulton County. City Hall, Atlanta, water supply system for residents in South Fulton County also embracing south side of Atlanta, **$2,500,000**. Wiedeman & Singleton, 760 W. Peachtree St., consult. engrs. CD 7/21/52.

Mass., Auburn—Town, Bd. Water Comrs., Water Dist. 68, approx. 2 mi. water mains, **$50,000**; pumping station, **$45,000**. Bids in November.

▲ **Mo., Moberly**—City, H. P. Phelan, mgr., City Hall, constr. dam, repairs city filter plant, exten. water distr. sys., storm and sanitary sewers, **$1,499,000**. Stanley Eng. Co., Hershey Bldg., Muscatine, Iowa, consult. engr. CD 10/10.

▲ **N. J., Weehawken**—Hackensack Water Co., 4100 Park Ave. plant expansion to incl. purification plant, pumping plant, distr. sys., storage, distr. mains, meters, hydrants, transmission mains and general structures. **$20,000,000**. A. Domiano, c/o owner, ch. engr.

N. Y., Hicksville—Hicksville Water Dist., Bethpage Rd., increase and imprv. water supply and distr. facilities (1) Dean Street plant, 1 m.g. ground storage tank, 8 m.g.d. pumping station, two 1,200 to 1,400 gpm deep wells with low lift pumps; (2) Miller Place plant site, two 1,000 to 1,200 gpm wells and pump stations with high lift pumps; (3) installation of c.i. transmission mains, 16 in. main from Dean St. plant east along Brewster Place to North Dr., 12 in. main east from Brewster Place along North Dr., Lee Ave., Farm Lane, Broadway and Mineola Ave. to New South Road then north along New South Rd. to Meadow Ave.; 10 in. main along New South Rd. from Mineola to Broadway; 12 in. main from Dean St. plant to 11 St. and Fifth Ave.; 10 in. main along Fifth Ave. from 11 St. then west along 10 St. Division Ave. and Glenbrook Rd. to Edgewood Dr.; 10 in. main south along Dean St. from plant site to Jay St.; 10 in. main along Duffy Ave. from Miley's Lane to Underhill Ave., 12 in. main east along John St. from Kuhl Ave. south along Engel St. across railroad through an easement to Duffy Ave., 10 in. main along John St. from Engel St. to Strong St., **$950,000**. H. G. Holzmacher, 69 W. Marie St., Hicksville, consult. engr.

Okla., Durant—City, City Hall, voted bonds Oct. 9, WW extens. **$302,000**. R. C. Dohe, Durant, engr. CD 9/19.

Pa., Mont Alto—General State Auth., 18 and Herr Sts., Harrisburg, water supply sys., addn., new impounding dam on Carbaugh Run, 500,000 gal. storage tank, Tuberculosis Sanatorium No. 1, **$475,000**, incl. land cost. Glace & Glace, 1001 N. Front St., Harrisburg, consult. engrs. CD 3/2.

▲ **S. D., Rapid City**—City, City Hall, defeated **$2,500,000** bonds Sept. 25, water sys. imprvs. L. A. Daly Co., Insurance Bldg., Omaha, Neb., consult. engr. CD 9/19.

Tex., Big Lake-Reagan County Water Supply Dist., c/o I. Ashcraft, dist. pres., water supply lines, **$500,000**; ground water storage, **$100,000**; water pumping station, **$200,000**; water supply, **$50,000**. The Marvin Turner Engineers, 305 W. 11th St., Austin, consult. engrs.

▲ **Tex., Galveston**—City, City Hall, voted bonds Oct. 6, c.i. water main, Fairwood Station to V. Point, **$640,000**; water distr. sys. extens. **$300,000**; general water distr. main, **$330,000**; million gal. steel elevated water storage tank, **$235,000**. CD 7/17.

Wash., Central Park—Central Park Water Dist., water sys. **$150,000**. Harstad & Assoc., 1000 Lenore St., Seattle, consult. engrs.

† **Wash., Richland**—Atomic Energy Comn., Richland, installing water meters, **$600,000**. Work may begin this year. CD 6/30/52, under Public Buildings.

SEWERS, WASTE DISPOSAL

▲ **Conn., Hartford**—Metropolitan Dist., 115 Broad St., Hockanum River Pollution elimination Burnside to replace old sewers now discharging into Hockanum River, **$110,000**; lift station Hockanum River pollution elimination, East Hartford, **$130,000**; trunk sewer, Meadow Brook Watershed, north of Keney Park and west of Expressway to parallel Meadow Brook; trunk sewer, Mill Brook Valley, Windsor, **$450,000**; trunk sewer to Berlin Turnpike, branch to Goff Brook Valley, Wethersfield, **$340,000**; branches of trunk sewers in Northwest and Southwest sections, extensions west of railroad and along Berlin Turnpike, Newington, **$550,000**. Warren N. Gentner, c/o owner, ch. engr.

▲ **Conn., New Britain**—City, City Hall, flood control, Willow Brook, improve brook bed, Lincoln St. to Arch St., relocate brook, Linwood St., Lyons St., retention dam near Shuttle Meadow Ave. **$1,025,000**. Chas. T. Main, Inc., 80 Federal St., Boston, Mass., consult. engr. Geo. J. Molleur, city engr. CD 6/19.

Conn., Sprague—Town, Town Hall, sewage treatment plant $100,000. Chandler & Palmer, Thayer Bldg., Norwich, consult. engrs.

Conn., Willimantic—City, City Hall, sewage disposal plant, Willimantic River at recreation park. $510,000. Gibbs & Hill, Inc., Penna Station, New York, N. Y., consult. engr. J. Nelson Harger, city engr. Bids will be called about Dec. 1. CD 7/31/47.

▲ Ill., Chicago—Chicago Sanitary District, 910 S. Michigan Ave., sewer from Posen to Markham to serve Robbins, Blue Island, Posen, Markham and Midlothian. $1,300,000. CD 2/8/51.

▲ Ind., New Albany—City, Bd. P. Wks. & Safety, sewage disposal plant and incinerator, $2,225,000. Consoer, Townsend & Assoc., 351 N. LaSalle St., Chicago, Ill., consult. engrs. CD 11/29/54.

▲ Kan., Emporia—City, City Hall, bond election Nov. 6 sewage treatment plant and sewer lines; Water Filtration Plant and water lines; dam. $1,707,000. Black & Veatch, 4706 Broadway, Kansas City, Mo., engrs. CD 9/26.

Kan., Leavenworth—City, City Hall, imprv. sewerage sys. $613,750. CD 3/30/50.

Kan., Turner—Bd. Trustees Shawnee Twp. of Wyandotte Co., 2151 S. 54 St., Kansas City, Kan., sewers, two lift stations, etc. in Sewer Dist. 8, Shawnee Twp. for city of Turner, $325,000, Truman Schlup, 355-367 Public Lavee Terminal, 1401 Fairfax Trafficway, Kansas City 15, Kan., consult. engrs. CD 9/7.

Mass., Easthampton—Town, Dpt. P. Wks., sewage treatment plant, $515,000. CD 8/6/47.

Mich., Inkster—Village, William Meadowcroft, mgr., 26730 Princeton Rd., storm sewer Northeast, Southeast and South Central areas, $750,000. Mason L. Brown & Son, 120 Madison St., Detroit, consult. engrs. CD 2/12/54.

▲ Minn., Edina—Village, Gretchan S. Alden, clk., 7.15 mi. sanitary sewers from northwest corner of village southeasterly along Nine Mile Creek to connect with trunk sewer at 72 St. and France Ave., 37,766 lin. ft. 9- to 24-in. sewers. $2,000,000. J. Zikan, village engr.

▲ Mo., St. Louis County—The Fee Fee Trunk Sewer, Inc., Sterling R. Kennedy, pres., main trunk sewer along Fee Fee Creek and laterals in 8,000 acre area between Olive Street Rd., St. Charles Rock Rd., Ashby Rd. and Missouri River with disposal plant on river side of McKelvey Rd. $1,000,000, Sterling Surveying & Engineering Co., 10798 St. Charles Rock Rd., St. Louis County, Zone 14, consult engr.

▲ N. J., Trenton—Hamilton Twp., 2090 Greenwood Ave, master storm drain system for southern end of township, Broad St Park Area, $2,000,000. Myron Feld, 2090 Greenwood Ave., consult. engr. CD 7/27.

N. Y., Coxsackie—Village, Village Hall, sanitary sewerage sys. and treatment plant, $413,200.

N. C., Mocksville—Town, voted bonds Oct. 9, enlarge and extend sewerage system, treatment plant, mains, etc. $225,000. Watson & Hart, 914 Summit Ave., Greensboro, consult. engrs.

▲ O., Cincinnati—City, City Hall, bond election Nov. 6, sewers, imprvs., various locations, $2,500,000. CD 11/5/54.

▲ O., Cleveland—Comrs. Cuyahoga Co., Court House, Zone 13, County has taken over building of sewage treatment plant for Village of Solon, $2,250,000. Willard Schade & Assoc., Chester-12th Bldg., Cleveland, Zone 14, consult. engrs., will design plant. John Puzenski c/o owner county sanitary engr. CD 5/27/54 under O. Solon.

O., Harrison—Village, City Hall, sanitary sewers, New Haven Rd. $100,000. James Wald & Assoc., 2565 Galbraith Rd., Cincinnati, engrs. Bids in October. CD 6/22, under LB.

Pa., Warren—General State Auth., 18 and Herr Sts., Harrisburg, addns. to sewage plant and collection sys., Warren State Hospital, $350,000. Gannett, Fleming, Corddry & Carpenter, Inc., 600 N. 2 St., Harrisburg, consult. engr. CD 3/2, under Public Buildings.

Pa., Waymart—General State Auth., 18 and Herr Sts., Harrisburg, addns. to sewage plant and collection sys., Farview State Hospital, $320,000. Peerless Engineers, Inc., 535 Hamilton St., Allentown, consult. engr. CD 3/2.

▲ Tex., Corpus Christi—City, City Hall, voted bonds Oct. 6, relocation sanitary sewer lines, lift sta., water line across ship channel, $330,000; storm open drainage, $100,000; storm sewers, $590,000; Salt Flats storm sewers, $175,000. CD 9/24.

Tex., Dallas—Center Constr. Co., 4606 Greenville St., sanitary sewers, $77,500. storm sewers, $77,000.

Tex., Galveston—City, City Hall, voted bonds Oct. 6, sewage disposal unit, $150,000; sanitary sewer lines, $428,000; sanitary sewerage sys. rehabilitation work, $125,000; storm sewers, $100,000. CD 7/17.

Tex., Grand Prairie—Centex Constr. Co., 4606 Greenville St., Dallas, sanitary sewers, $75,000; storm sewers, $75,000.

Tex., Irving—National Real Estate Development Corp., c/o Ben H. Carpenter, Southland Life Bldg., Dallas, storm sewers, $75,000; sanitary sewers, $77,500 in "Northgate" subdivision.

Tex., Mesquite—Centex Constr. Co., 4606 Greenville, Dallas, sanitary sewers, $76,150; storm sewers, $75,000.

Tex., San Antonio—H. B. Zachry Properties, Inc., 310 S. St. Mary's St., sanitary sewers, $77,000; storm sewers, $75,000, beyond Loop 13.

▲ Wash., Everett—City, City Hall, 2 disposal plants with necessary trunk lines, $4,000,000. Gray & Osborne, 228 2 St., Yakima, consult. engrs. CD 1/20.

Wash., Yakima—City, City Hall, industrial waste line along Fruit Row, $302,000. S. Hobbs, city engr.

Wis., Whitewater—City, enlarge sewage disposal plant. $113,000. Jensen & Johnson, Elkhorn, consult. engrs.

▲ Ont., Cooksville—Toronto Twp., Cooksville, sewage disposal plant at Lakeview, and 3 sewerage mains to look after output from local pipe lines to serve Cooksville, Dixie and the lakeshore areas, $4,000,000.

BRIDGES

▲ Ind., Indianapolis—Dpt. P. Wks., City Hall, Raymond St. Bridge over White River, four-lane approach to bridge and elevated roadway over West St., Belt R.R. and down at Bluff Rd., $2,237,635; or continuing the elevated road across Bluff Rd. and down at Meridian St., $226,000 more. Pierce, Gruber & Beam, Inc., 518 N. Delaware St., consult. engr. CD 3/31/44.

Kan., Larned—Pawnee Co., bridge, Arkansas River, near Garfield, $300,000. Servis, Van Doren & Hazard, 2015 Gage St., Topeka, consult. engrs.

N. J., Cape May Court House—Bd. Freeholders, Cape May Co., Cape May Court House, high level steel, concrete bridge and approaches between Ocean City and Marmora, $250,000. Walter A. Keppler, co. engr.

▲ MASSACHUSETTS — Commonwealth of Mass., Dpt. Pub. Wks., 100 Nashua St., Boston,
Danvers—railroad bridge reconstr. Rte. 114, $150,000. Bids latter part of month.
Erving—bridge (Connecticut River), $2,000,000. Bids late Summer 1957.
Northampton—bridge and approaches over Beaver Brook, $120,000. Bids latter part of month.

O., Evendale—Village, Reading Rd., bond election Nov. 6, elimination grade crossing in village, $800,000. c/o Owners staff engr., Wm. Leonard, ch. bd.

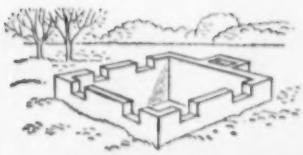
O., Marion—City, City Hall, bond election Nov. 6, grade crossing elimination, $500,000.

▲ Tex., Corpus Christi—City, City Hall, voted bonds Oct. 6, bridge lights, utility crossings, freeway, $4,270,000. CD 9/24.

STREETS AND ROADS

† IDAHO—Bureau P. Rds., Dpt. Commerce, Boise,
Bonner Co.—grading, surf. 3.4 mi. Denton curves near Hope, on U. S. Hy. 10A, $900,000;
extending Lewis & Clark Hy. $500,000. Work may start next year.

▲ MASSACHUSETTS—Commonwealth of Mass., Dpt. Pub. Wks., 100 Nashua St., Boston,
Abington—Rte. 123, Rte. 18 to Rockland Line, $230,000, Bids first half 1957, CD 3/14/55.
Amherst—relocation along Connecticut River Rte 116, $1,800,000. Bids in December.
Andover—3 mi. road from Merrimac Bridge to Dascomb Rd. part of reconstr. Rte. 28, $3,000,000, Bids latter part of October.
Bernardston—Rte. 5, Vermont Line south, $350,000, Bids first half of 1957.
Blackstone—relocation Rte. 122-by., and two bridges, $600,000, Bids November 1956.
Boston—Park St. to Boston St., Central Artery, $6,000,000, Bids first half of 1957.
Southeast Expressway—Columbus Circle to Boston St., $8,000,000, Bids November 1956.
section Central Artery from Dover St. to Union Park St., part of J. F. Fitzgerald Expressway, $8,000,000, Bids last of December.
Braintree—Rte. 128—Granite St. (Rte. 37) interchange, $1,000,000, Bids first half of 1957.
section Southeast Expressway-southerly to Union St., $7,400,000, Bids latter part of October.
Braintree-Weymouth—Southeast Expressway exten.-Union St. to Rte. 18, $5,500,000, Bids in December.
Brewster-Orleans—Mid-Cape hy. easterly constr., $2,000,000, Bids latter part of October.
Charlestown—Rutherford Ave.-Central Artery, $12,000,000, Bids first half of 1957.
Chesterfield—Rte. 143 from Williamsburg 2 mi. west, $150,000, Bids in November.
Fall River—Western Expressway, $3,000,000, Bids first half 1957. CD 10/1/54.
Freetown-Lakeville—relocation Rte. 140, $1,500,000, Bids in November.
Hanover—Rte. 139 to Rockland Line, $200,000, Bids first half 1957.
Holyoke-South Hadley—Rte. 202, $1,900,000, Bids first half 1957.
Lakeville-Taunton—connection relocated Rte. 140 to Anvet's Memorial Hy., $2,500,000, Bids first half 1957.
Marion-Wareham—imprvs. Rte. 6, $600,000, Bids latter part of October.
Methuen—Rte. 28 and 113 to connect east and west ends of relocation sect. of Rte. 113, $2,800,000, Bids first half 1957.
Middleboro—relocation Rte. 28 from Middleboro Circle to Wood St. Middleboro, $3,500,000, Bids first half 1957.
Milton—access to Old Rte. 128, $250,000, Bids in November.
Milton-Randolph—Rte. 128-Canton Line to ½ mi. east present Rte. 28 incl. largest directional interchange in State, $4,700,000, Bids first half 1957.
Orange—Rte. 2 westerly, $1,000,000, Out Bids Oct. 29.
Orleans-Eastham—Rte. 6, $1,800,000, Bids first half 1957.



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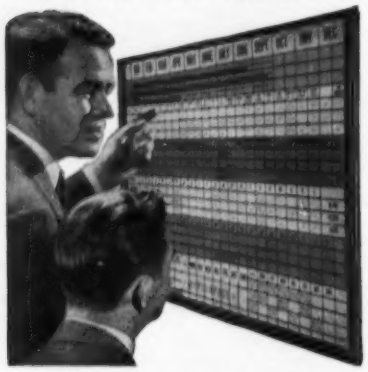

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Phillipston—relocation Rte. 2, $1,800,000, Bids in January.
Quincy—Southern Artery reconstr.—Sea St. to Washington St., $500,000, Bids first half 1957.
Quincy-Braintree—Rte. 128 (⅓ mi. east of Rte. 28 to ½ mi. west of Granite St.-Rte. 37), $1,700,000, Bids first half 1957.
Randolph—section Amvets Hy.—Canton line to point north of Canton St., $2,000,000, Bids first half 1957.
Reading-Woburn-Wilmington—section relocation Rte. 28, $2,800,000, Bids latter part of December.
Rehoboth—secondary Rte. imprv. Rte. 118, $600,000, Bids in December.
Seekonk—Rte. 6 intersection imprv., $120,000, Bids latter part of October.
Stoughton-Canton—sect. Amvet's hy. north Rte. 138, $2,500,000, Bids Oct. 27.
Tyngsborough—wid'n. Rte. 3 from Tyngsborough Bridge to New Hampshire Line, $300,000, Bids first half 1957.
Waltham—imprv. Moody St., $1,000,000.
Westport—Rte. 6 connecting Rte. 5, $3,000,000, Bids first half 1957.
Weymouth-Hingham—Rte. 128 from Rte. 18, $3,500,000, Bids first half 1957.
Wilmington—Rte. 28 relocation to Rte. 125, $4,100,000, Bids first half 1957.
Wilmington-Tewksbury-Andover—relocation Rte. 28 from Rte. 125 to Dascomb Rd. Andover, $3,500,000, Bids first half 1957.
Woburn-Stoneham-Reading—sect. relocation Rte. 28, (2½ mi.), $2,500,000, Bids in December.
▲ **NEW HAMPSHIRE**—State Dpt. P. Wks. & Hys., State House Annex, Concord,
Gilsum—highway. $2,000,000. Bids early November 1956.
▲ **O., Cincinnati**—Comrs. Hamilton Co., Court House, bond election Nov. 6, road imprvs., various locations, $6,000,000.
▲ **O., Cincinnati**—City, City Hall, bond election Nov. 6, expressway program, $15,500,000; street imprvs., various locations, $6,500,000. CD 3/8.
O., Hamilton—City, City Hall, bond election Nov. 6, city streets and bridges, $750,000. CD 12/24/44, under Streets and Roads, CD 11/10/53, under Bridges.
O., Steubenville—City, City Hall, municipal bond election Nov. 6 for acquisition of real estate and easements for High St. thoroughfare. $750,000.
▲ **Tex., Beaumont**—Jefferson Co., Court House, bond election Nov. 6, road work, paving, widening, from Chambers County line to Neches River Bridge, $1,690,000; road work, paving, Hy. 347, Central Gardens to Hy. 87, Port Arthur, $2,150,000; Hy. 87, intracoastal canal to Neches River Bridge, $518,300; 4 lanes, Hy. 90 from 4 St. Beaumont to Liberty Co. line, $2,287,850. W. O. Bower, c/o owner, engr.
Tex., Odessa—City, City Hall, street imprvs., paving. $685,000. CD 4/5.

AIRPORTS

† **Fla., Pensacola**—FIELDS DEVELOPMENT—Dist. P. Wks. Offices, Sixth Naval Dist., Bldg. 12, U. S. Naval Base, Charleston, S. C. plans by Palmer & Baker, Inc. archt.-consult. engr., P. O. Box 346, Mobile, Ala. preparation of FY 1958 advance planning for outlying fields development, Naval Air Basic Training Command. CD 8/27.

LATIN AMERICA

▲ **Mexico**—HOUSES—Sindicato Nacional de Electricistas, Lerma, 333 Mexico City, plans houses for 20,000 members various locations, over 3 years. $14,400,000.
▲ **Venezuela**—Ministerio de Obras Publicas, Centro Simon Bolivar, Torre Sur, Caracas D. F., plans improving port facilities, incl. dock at Guanta and 20 mi. railroad from Maricual coal mines. $13,500,000.

FOREIGN

▲ **Jordan and Saudi Arabia**—RAILROAD—Govt. of Saudi Arabia, Jeddah, plans rehabilitation of the Hedjaz Railway line from Ma'an in Jordan to Medina, Saudi Arabia. $25,000,000-$50,000,000. Brown & Blauvelt, engrs., 468 Madison Ave., New York 16 N. Y., U. S. A., will design and supervise. (Correction—name of railroad). CD 10/3.

PUBLIC BUILDINGS

Calif., Alhambra—HOSPITAL—Alhambra Community Hospital, Alhambra, plans by Jay Dewey Harnish & Eugene W. Fickey, Jr., 222 E. "B" St., Ontario, rein.-con. Alhambra Community Hospital addn. $750,000.
▲ **Calif., Clovis**—SCHOOL—Jefferson Union Elem. School Dist., c/o Supt., 5013 N. Fowler St., $200,000 bond election Nov. 15 school addn. and new school, $1,000,000. Harn & Martland, 2016 Merced St., Fresno, archts. CD 6/27.
▲ **Calif., Cupertino**—SCHOOLS—Cupertino Elementary School Dist., Cupertino, voted bonds, new schools and existing school addns. $2,445,000.
▲ **Calif., Del Paso Heights**—SCHOOL—Grant Union School Dist., Grand Ave., voted $2,550,000 bonds Oct. 4, for school constr., incl. high school and Junior High School, Starks, Jozens & Nacht, Native Sons Bldg., Sacramento, archts. CD 8/17.
▲ **Calif., Livermore**—SCHOOLS—Livermore Elementary School Dist., Livermore, voted bonds new elementary schools, existing schools addns. $4,000,000.
▲ **Calif., Oakland**—SCHOOLS—Oakland Unified School Dist., c/o Supt., 1025 2nd Ave., plans by Warnecke & Warnecke, Financial Center Bldg., 2 story rein.-con. Lowell Junior High School, $1,300,000; plans by Harry A. Bruno & Edw. D. Cerruti, 1440 Broadway, 1 and 2 story, struc. steel, steel studs and stucco exterior, Santa Fe Elementary School, $700,000. CD 6/8.
▲ **Calif., Redwood City**—HOSPITAL WING—Sequoia Hospital Dist., Whipple Ave. and Alameda de las Pulgas, Redwood City, voted bonds hospital wing, $2,925,000. CD 8/24.
▲ **Calif., San Jose**—COUNTY OFFICES, etc.—Bd. Supervs. Santa Clara Co., Court House, San Jose, bond election Nov. 6, county office-service bldg., $2,825,000; hospital chronic nursing unit, $450,000; juvenile hall and probation dpt., $1,200,000; health department wing, $180,000; North County building, $835,000; communications bldgs., $350,000. CD 10/28.
▲ **Calif., San Jose**—SCHOOLS—Moreland Elementary School Dist., Rt. 1, Box 270, new schools $2,000,000. State aid approved.
Calif., Sharp Park—SCHOOL—Laguna Salada Union Elementary School Dist., c/o Supt. P. O. Box 5, plans by Mastin & Hurd, 526 Powell St., San Francisco, application for state aid approved Pedro Valley No. 3 School. $537,221.
▲ **Calif., Sunnyvale**—SCHOOLS—Sunnyvale Elementary School Dist., Sunnyvale, voted bonds, elementary schools, existing school addns. $4,435,000. CD 10/26/54.
▲ **Colo., Littleton**—SCHOOL—School Dist. No. 6, 176 Grant Ave., bond election Oct. 30, school bldgs. in Clarida and Hawkins Development & Perlmutter Subdivision, $1,250,000.
Conn., Berlin—SCHOOL—Town, Town Hall, Junior High School. $700,000.
▲ **Conn., Fairfield**—SCHOOL—Town, Town Hall, Elementary School, Fairfield Beach. $1,200,000.
▲ **Conn., Guilford**—SCHOOL—Town, Town Hall, plans by Fletcher Thompson, Inc., 211 State St., Bridgeport, high school, Long Hill Rd. $1,000,000. CD 7/9.
▲ **Conn., Milford**—SCHOOL—Town, Town Hall, Elementary School, Walnut Beach. $1,000,000.
▲ **Conn., New Britain**—LIBRARY—State P. Wks. Dpt. 165 Capitol Ave., Hartford, plans by Toby Vece, 9 Roger Williams Rd., Bridgeport, 3 story, 91x159 ft. rein.-con. library at State Teachers College. $1,200,000. CD 1/13/49.
▲ **Conn., Seymour**—SCHOOL—Town, Town Hall, Elementary School, Skokorat Rd. $1,000,000.
Conn., West Hartford—SCHOOL—Town, Town Hall, plans by Warren H. Ashley, 731 Asylum Ave., Hartford, North End High School, south of Wampanoag Country Club (formerly designated as West End High School). $500,000. Chas. A. Currier & Assoc., 967 Farmington Ave., consult. engrs. CD 9/26.
Ga., Douglas—HOUSING—Douglas Housing Auth. plans by Abreau & Robeson, 141 Walton St. N.W., Atlanta, 50 housing units. $500,000.
▲ **Ga., Jesup**—HOSPITAL—Georgia State Health Dpt., State Office Bldg., Atlanta, plans by Wilfred J. Gregson & Assoc., Mortgage-Guarantee Bldg., Atlanta, 69-bed hospital $1,200,000.
▲ **Ga., LaGrange**—HOSPITAL—Georgia State Health Dpt., State Office Bldg., Atlanta, plans by Abreu & Robeson Architects, 141 Walton St., Atlanta, 60-bed city-county hospital addn. $1,500,000.
Ga., Lawrenceville—HOSPITAL—Georgia State Health Dpt., State Office Bldg., Atlanta, plans by Cuttino & Assocs., Mortgage-Guarantee Bldg., Atlanta, 35-bed hospital. $600,000.
Ga., Marietta—HOSPITAL—State Health Dpt., State Office Bldg., Atlanta, plans by Abreu & Robeson Architects, 141 Walton St., Atlanta, 101-bed Kennestone Hospital addn. $1,500,000. CD 4/12/55.
Ga., Monroe—HOSPITAL—Georgia State Health Dpt., State Office Bldg., Atlanta, plans by Abreu & Robeson Architects, 141 Walton St., Atlanta, 45-bed hospital. $750,000.
▲ **Idaho, Boise**—AUDITORIUM—Ada Co., Co. Courthouse, $1,900,000 bond election Nov. 6 public auditorium. CD 12/23.
▲ **Ill., Chicago**—SCHOOL—Bd. Educ., 228 N. La Salle St., plans by Naess & Murphy, 80 E. Jackson Blvd., 2 story, brick, stone. Wm. J. Bogan High School, 79 St. and Pulaski Rd., $3,000,000. CD 6/10/55.
▲ **Iowa, Clinton**—SCHOOLS—Bd. Educ., Clinton voted $1,745,000 bonds Sept. 25, 2 high schools and an elementary school. CD 8/28.
▲ **Kan., Great Bend**—SCHOOL—School Dist. No. 1, D. V. Swartz, supt. Schools, $1,290,000 bond election Nov. 6, Junior High School, Harrison, Polk, 19th and 21st Sts. Hibbs, Robinson & Pettit, 519 S. Broadway, Wichita, archts. CD 7/18.
Ky., Mount Sterling—HOUSING—Mount Sterling Municipal Housing Comn., plans by James A. Clark, 59 S. Main St., Winchester, and Carroll Rankin, assoc. archt., 314 S. Ashland Ave., Lexington, public housing, 22 two story, 27x110 ft. bldgs., 60 one story 27x70 ft. bldgs., Ky. 20, 1 and 2. $850,000. CD 9/17.
Ky., Newport—HOUSING—Newport Municipal Housing Comn., Fourth and Isabella Sts., plans by Meriwether, Marye & Assoc., 248 E. Short St., Lexington, 2 story, brick housing bldgs., 50 units, Third and Isabella Sts. $745,000. CD 1/31/50.
▲ **La., Lake Charles**—HOUSING—Lake Charles Housing Auth., Lake Charles, plans by Matkin & Fitch, archts.-engrs., 3105 Ryan St., Lake Charles, 400 housing units. $5,000,000. (Correction—architect's name and address). CD 9/19.
Md., Baltimore—MEDICINE—State, Dpt. P. Imprvts., 506 Park Ave., Zone 1, plans by Jas. R. Edmunds, Jr.,

1025 St. Paul St., Zone 2, concrete, steel brick masonry Dpt. of Medicine Bldg., University Hospital, Lombard and Greene Sts. $550,000.

Mich., Erie—SCHOOL—Bd. Educ. Mason Consolidated School Dist., voted bonds Sept. 28, school, expansion. $725,000.

▲ Mich., St. Clair Shores—SCHOOL—City Lake Shore School Dist., 23700 Mack Ave., voted bonds Oct. 1, school program. $2,000,000. CD 8/30.

Minn., Anoka—HOSPITAL—Anoka Community Hospital Assn. R. Nilsson, chn., plans by Toltz, King, Duvall, Anderson & Assocs., 1509 Pioneer Bldg., St. Paul, 2 story, part bsmnt. hospital. $600,000.

▲† Minn., Bedmiji—POST OFFICE—General Services Admin., Pub. bldgs. Service, 2306 E. Bannister Rd., Kansas City, Mo., post office. $1,200,000. No appropriation. CD 2/29.

† Minn., Brainerd—POST OFFICE—General Services Admin., Pub. Bldgs. Service, 2306 E. Bannister Rd., Kansas City, Mo., post office. $612,000. No appropriation.

Minn., Minneapolis—HEALTH SERVICE—Regents of the University of Minn., C. A. Smith, purch. agt., 404 Admin. Bldg., plans by Magney, Tusler & Setter, 303 Roanoke Bldg., student health service addn. $650,000. Constr. not before 1958.

▲ Minn., Willmar—SCHOOL—Bd. Educ., A. M. Wisness, clk., district defeated Oct. 2 proposal to authorize $1,000,000 bond issue for high school. CD 9/20.

▲ Miss., Columbus—HOUSING—The Housing Authority of Columbus, plans by William I. Rosamond, Prospst Bldg., Columbus, 380 housing units. $4,200,000.

▲† Mo., St. Louis—RECORDS CENTER—General Services Admin., Pub. Bldgs. Service, 19 and F Sts. N.W., Wash. 25, D. C., 1 story, 488,000 sq. ft. records center storage with air-conditioned offices, downtown area. $6,740,000.

▲ Mont., Columbia Falls — SCHOOL — Columbia Falls High School Dist., $1,490,000 bond election Nov. 6, high school. Weed & Fehlberg, Sundelius Bldg., Kalispell, archts. CD 3/26.

▲ Mont., Great Falls—HOSPITAL—Cascade Co., Court House, $1,900,000 bond election Nov. 6, county convalescent hospital. CD 5/17/55.

▲ Mont., Great Falls—WHEAT PALACE—Cascade Co., Court House, petitions asking vote on proposed $2,250,000 bond issue to construct "Wheat Palace" failed to get sufficient signers to place issue on Nov. 6 ballot. CD 6/13.

▲ Neb., Lincoln—STUDENT UNION—University of Nebraska, 12 and R Sts., plans by L. A. Daly Co., Insurance Bldg., Omaha, student union bldg. $1,250,000. CD 5/8/50.

▲ N. J., Jersey City—SCHOOL—City, City Hall, school in Curries Woods area. $1,000,000.

▲ N. J., Mahwah—SCHOOL—Bd. Educ., Malcolm Rd., plans by Warren H. Ashley, 967 Farmington Ave., West Hartford, Conn., high school, Birch tract. $4,000,000. CD 5/14.

N. J., Pennington—GYMNASIUM—Pennington School, West Delaware Ave., plans by Lacy & Aperton, Hotel Sterling, Wilkes Barre, Pa., addn. to gymnasium and new dining hall and kitchen. $375,000.

▲ N. J., Union—SCHOOL—Bd. Educ. voted $2,300,000 bonds Oct. 2, Junior High School and addn to Primary School.

▲ N. Y., Brooklyn—HOUSES—New York City Housing Auth., 299 Broadway, New York, Zone 7, plans by Kelly & Gruzen, 80 Fifth Ave., New York, Zone 3, Luna Park Houses, five 20 story bldgs., 1,560 units, 2808-11 Eighth St. and 2,848 units at 2900 and 2861 W. 12 St. $9,500,000. CD 12/20.

N. Y., Central Square—SCHOOL—Bd. Educ., Central School Dist., plans by Sargent, Webster, Crenshaw, Folley, 2112 Erie Blvd. E., school, and addn. and agriculture shop. $600,000.

▲ N. Y., Fayetteville—SCHOOL—Central School Dist. 1, Fayetteville, Manlius, plans by Carl Clark, 625 James St., Syracuse, elementary school. $1,100,000. CD 9/27.

▲ N. Y., Kenmore-Tonawanda—SCHOOL—Bd. Educ., Kenmore-Tonawanda, a $1,280,000 referendum called for Nov. 1, 2 elementary schools, renovate Washington Elementary School. CD 3/15/55.

N. Y., Plainedge—SCHOOL—Union Free School Dist. No. 18, referendum vote to be held on Oct. 27, school, Madison St., south of Jerusalem Ave. $975,000. CD 3/21.

▲ N. Y., Rochester—SCHOOL—Bd. Educ., 13 S. Fitzhugh St., plans by Faragher & Macomber, 900 Powers Bldg., Rochester, Zone 14, East High School. $2,000,000. Thomas H. McKaig, 2715 W. Henrietta St., struct. engr. Robson & Woese, Inc., 311 Alexander St., mech. engr. CD 8/22/46.

▲ N. Y., Wantagh—SCHOOL—Bd. Educ., plans by George E. Tumey, 1941 Wantagh Ave., Wantagh, two elementary schools. $2,000,000. CD 12/13.

N. D., Fargo—COURT HOUSE—Cass Co., Court House. $750,000 bond election Nov. 6, court house addn. Kurke Assocs., 1117 13 Ave. N., archts. CD 9/28.

O., Benton—HIGH SCHOOL, etc.—East Holmes Local School Dist., Benton, plans by Joseph Baker & Assoc., Newark, high school and other facilities. $678,000. CD 9/14.

O., Columbus—BUILDING—Ohio Bureau of Unemployment Compensation, 427 Cleveland Ave., 30,000 sq. ft. addn. to existing bldg. by bricking in, air-conditioning and install elevators in old factory bldg., incl. erection of 1 story L addn. $675,000.

O., Coventry—SCHOOL—Coventry Local School Dist., Coventry, bond election Nov. 6, school addn. $550,000.

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O., **Hudson**—SCHOOL—Hudson Local School Dist., bond election Nov. 6, school. **$500,000.**

O., **Steubenville**—SCHOOL—Cross Creek Local School Dist., **$617,000** bond election Nov. 6, school. CD 7/24.

Okla., **Chickasha**—HOSPITAL—Grady Co., Court House, bond election Nov. 6, county hospital. **$930,000.** Brauer & Wood, Chickasha, archts.

▲ Ore., **Corvallis**—CHEMISTRY—State Bd. Higher Educ., University of Oregon, Eugene, 2nd unit physics chemistry bldg., Oregon State College. **$2,257,500.** To go ahead in 1958. CD 4/13/54.

▲ R. I., **Kingston**—DORMITORIES—State R.I. & Providence Plants, Purch. Agent, State House, Providence, plans by Joseph M. Mosher & Son, Inc., 77 Washington St., Providence, 2 men's dormitories. **$1,000,000.** CD 9/1/43.

S. D., **Sturgis**—HIGH SCHOOL—Bd. Educ., Sturgis, high school. **$750,000.**

Tex., **Abilene**—LIBRARY—City, plans by David S. Castle Co., 1082½ N. 1st St., library. **$700,000.**

▲ Tex., **Austin**—COURT HOUSE REMODELING, etc.—Travis Co., N. L. Gault, comr., Precinct 2, Court House, bond election Nov. 13, court house remodeling, incl. 3 story masonry addn. **$1,000,000.**

Tex., **Cuero**—HIGH SCHOOL—Cuero Independent School Dist., Cuero, plans by Fehr & Granger, 502 E. 5 St., Austin, Senior High School. **$750,000.** CD 10/3.

Tex., **Ft. Worth**—SCHOOL—Castleberry Common School Dist., O. D. Strather Bd. Chn., voted bonds Sept. 29, for Senior High School, **$500,000.** A. B. Withers, c/o American Fidelity Bldg., archt. CD 9/12.

▲ Tex., **Port Neches**—SCHOOLS—Port Neches Independent School Dist., Port Neches, voted bonds Sept. 29, Junior High School at Port Neches, **$1,750,000;** Junior High School at Groves, **$1,250,000;** elementary school at Port Neches, **$469,135;** elementary school at Groves **$450,000;** storage garage and warehouse, **$95,000.** CD 9/21.

Wash., **Naselle**—SCHOOL—School Dist. 129-130, election Nov. 6, special levy to aid in financing high school. **$500,000.** CD 1/20.

Wyo., **Green River**—COURTHOUSE—Sweetwater Co., Green River **$800,000** bond election Nov. 6. courthouse and jail capable of housing 50 prisoners. CD 8/5/55.

Ont., **Toronto**—HOMES FOR ELDERLY PERSONS—Municipality of Metropolitan Toronto, 67 Adelaide St. E., plans by Jackson, Ypes & Assocs., consult. engrs.-archts., 24 Northtown Shopping Plaza, 5385 Yonge St., eight 2 story, bsmnt., 42x103 ft. homes for elderly persons, 125-acre site, Barthurst St. and Lawrence Ave. **$700,000.** CD 6/3/49.

COMMERCIAL BUILDINGS

Calif., **Compton**—DWELLINGS—Eastern Builders, 501 E. Compton Blvd., plans by Roy Kiter & Assoc., 3321 Tweedy Blvd., South Gate, 56 frame, stucco dwellings **$560,000.**

▲ Calif., **Hayward**—DEPARTMENT STORE—Sears, Roebuck & Co., 2650 Olympic Ave., Los Angeles, plans by Reynolds & Chamberlain, 3833 Piedmont Ave., Oakland, Calif., department store, near here, **$3,000,000.**

▲ Calif., **Millbrae**—HOME SUBDIVISION—Tony Rossi Real Estate, 299 El Camino Real, 150-home subdivision, near Millbrae Highlands subdivision. **$2,500,000.**

▲ Calif., **San Francisco** — OFFICE — Crown-Zellerbach Corp., 343 Sansome St., San Francisco, plans by Hertzka & Knowles, 85 Post St., and Skidmore, Owings & Merrill, 1 Montgomery St., 22-story, rein.-con. 230,000 sq. ft., office bldg., 200-car basement agrage, 20,000 sq. ft. landscaping, Market, Bush and Battery Sts. **$10,000,000.** H. J. Brunie, Sharon Bldg., consult. engr. CD 7/24.

▲ Calif., **San Francisco**—HEADQUARTERS—George W. Warnecke Co., Inc., 57 Post St., San Francisco, 10 story, rein.-conc. headquarters office bldg. **$5,500,000.** Southern Pacific Co., lessee. Bids in about 30 days. CD 8/17.

▲ Conn., **New Haven**—RAILROAD STATION and SHOPPING CENTER—New York, New Haven & Hartford R. R. Co., T. P. Polson, ch. engr., 20 Meadow St., New Haven, Conn., and Atlas Corp., 6 J. Mal. Wk., Yonkers, N. Y., railroad station and shopping center, site of existing station, **$20,000,000.**

Conn., **Wallingford**—HOUSES—Cheshire Development Corp., Gaylord Farm Rd., 55 houses development, Gaylord Farm Rd. **$550,000.**

Conn., **Wallingford**—HOUSES—Deer Run Estates, Cook Hill, 55 houses development, Deer Run Estates, Cook Hill. **$550,000.**

▲ Conn., **Wallingford**—HOUSES—Green Manor Estates, Inc., 681 Parker St., Manchester, 163-houses Parker Farms Rd. **$2,445,000.**

▲ Conn., **Wallingford**—HOUSES—James F. Linehan, N. Ridgeland Rd., 126 houses, development, Ridgeland Hills, Shoebox Rd. **$1,260,000.**

▲ Ill., **Chicago**—OFFICE, etc.—Presbyterian St. Lukes Hospital, 1753 Congress St., plans by Burnham & Hammond, 53 W. Jackson Blvd., 12 story, brick office bldg., 1700 block of Harrison St., **$3,400,000;** new kitchen, cafeteria, nursing school addn., outpatient clinic bldg. 1700 block of Congress St., **$2,453,000;** 150-unit personnel apartment bldgs., Damen & Harrison Sts., **$2,300,000.** CD 9/16/53.

▲ Ind., **Gary**—STORE—Montgomery Ward & Co., 619 W. Chicago Ave., Chicago, Ill., plans by Frederick W. Collins, 400 W. 5th Ave., 1 and 2 story, brick dept. store, 35th and Grant Sts. **$2,000,000.**

Ind., **New Albany**—STORE—Doerhoffer Estate, c/o Nevin & Morgan, archts., Starks Bldg., Louisville, Ky., 1 story, 26,000 sq. ft., brick retail store, Pearl and Spring St. **$500,000.** E. R. Ronald & Assoc., 554 S. 3rd St., Louisville, Ky., consult. engrs.

▲ Ind., **South Bend**—SEMINARY—Holy Cross Fathers, Notre Dame University, plans by Belli & Belli, 6040 W. Fullerton Ave., Chicago, Ill., 5 story, bsmnt. Moreau Seminary. **$2,000,000.** CD 5/23/47.

▲ Iowa, **Iowa City**—SCHOOL—Catholic Parishes of St. Patrick's, St. Wenceslaus, St. Thomas Moore & St. Mary's, 104 E. Jefferson St., plans by Smith, Voorhees, Jensen, Silletto & Assoc., 206 Davidson Bldg., Des Moines, Regina High School. **$1,000,000.** CD 1/27/55.

Ky., **Lexington**—DORMITORY—Transylvania College, 200 W. 3 St., Zone 7, plans by John T. Giltig, 180 Walnut St., housing and dining facilities. **$900,000.** CD 9/14.

▲ La., **Baton Rouge**—HOTEL—Heidelberg Hotel, Lafayette St., plans by Design, Inc., 906 Sidney St., St. Louis, Mo., 10 story Heidelberg Hotel addn. **$2,000,000.**

▲ Md., **Bladensburg**—SCHOOL—Daughters of Charity of St. Vincent de Paul of Emmitsburg, constr. girls' high school to be known as Elizabeth Seton High School. **$1,000,000.**

▲ Md., **Wheaton**—SCHOOL—Xaverian Brothers, 10000 New Hampshire Ave., Silver Spring, plans by Johnson & Boutin, 1417 22nd St. N. W., Wash., D. C., constr. Our Lady of Good Counsel High School at Georgia and Arcola Aves. **$1,000,000.**

▲ Minn., **St. Paul**—SCHOOL—Our Lady of Peace High School, Sisters of Charity, Sister Mary Adoinus, 680 Portland Ave., plans by Ellerbe & Co., E. 505 First National Bank Bldg., St. Paul, high school wing, incl. auditorium, new convent and chapel, Summit Ave. and Victoria St. **$1,500,000.**

▲ Minn., **St. Paul**—PRIORY AND SCHOOL—Sisters of St. Benedict, St. Paul's Priory, Mother M. Young, prioress, 301 Summit Ave., plans by Haarstick, Lundgren & Assoc., N. 212 First National Bank Bldg., priory and high school for girls, Larpenteur Ave. and Hy. No. 100. **$3,000,000.**

▲ Mo., **St. Louis**—HOSPITAL—Missouri Baptist Hospital, 919 N. Taylor Ave., J. S. Pillsbury, Bd. Pres., imprv., expansion hospital facilities, incl. new nurses school, nurses home and new surgical wing, **$1,500,000.** Build early in 1957.

▲ N. J., **Cranford**—BUILDING—Union Junior College, Holly Ave., plans by Frederick A. Elsasser, 2013 Morris Ave., Union, bldg. on land owned by college on Springfield Ave. opposite Nomahegan Park, **$1,000,000.**

▲ N. J., **Hoboken**—SCIENCE, etc.—Stevens Institute of Technology, 5th and Hudson Sts., plans by John McNamara, 701 Seventh Ave., New York, N. Y., science and engineering bldg. **$2,500,000.**

N. J., **Short Hills**—CHURCH—Christ Episcopal Church, Highland Ave., plans by Paul Drake, 100 Summit Ave., Summit, enlarging church. **$625,000.**

N. Y., **New York**—HOSPITAL—Hospital Bldg. Corp. of Bronx, 2396 Tiebout Ave., plans by Anthony J. De Pace, 151 W. 46 St., 3 story hospital, Pelham Parkway South, SWC of St. Paul Ave. **$950,000.**

O., **Cleveland Heights** — OFFICE — Jewish Community Center, 2049 E. 105 St., Cleveland, Zone 6, plans by The Associated firms of George B. Mayer, The Arcade, Cleveland, Zone 14 and Braverman & Halperin, 7016 Euclid Ave., Cleveland, Zone 3, central office and activities bldg. **$500,000.** CD 11/17.

O., **Cuyahoga Falls**—SHOPPING CENTER, etc.—Owners, c/o Jerome M. Friedlander, Citizens Bldg., Cleveland, 3 story, 200x250 ft. shopping center addn., department store bldg. at north end of State Road, Shopping Center. **$500,000.**

▲ O., **North Olmsted**—SHOPPING CENTER—Saul Biskind, 4511 Brookpark Rd., Cleveland, Zone 29, plans by Nathan Bernstein, 1991 Lee Rd., Cleveland Heights, 200,000 sq. ft. shopping center. **$8,000,000.** Bids next spring. CD 11/9/55.

Tex., **Arlington**—MOTEL—Towner Motel Co., c/o Chamber of Commerce, Arlington, 2 story, 112 room motel. **$900,000.**

▲ Tex., **College Station**—SHOPPING CENTER—Tex. Shopping Center, Inc., c/o Herschell Burgess, 201 Main St., plans by Caudill, Rowlett, Scott & Assoc., 425 S. Main St., Bryant, shopping center, **$1,000,000.**

▲ Tex., **Dallas**—SHOPPING CENTER—Glen Oaks Shopping Center, c/o Claton Wyman, 4960 Clear Creek Rd., shopping center, 63-acre tract, area Beckley and Ledbetter Sts. **$3,000,000.**

▲ Tex., **Pampa**—HOTEL—Pampa Hotel, Inc., Pampa, Tex., brick, masonry hotel. **$1,000,000.**

Tex., **San Antonio**—SHOPPING CENTER—Owner, c/o W. L. Moody III, Palo Alto Rd., shopping center, Loop 13, between Blanco Rd. and San Pedro Ave. **$750,000.**

▲ Tex., **San Antonio**—SHOPPING CENTER—Northview Corp., c/o John B. Mills, Mercantile Security Bldg., Dallas, revised plans by Harvin C. Moore, 2006 W. Alabama St., Houston, 1 and 2 story, 350,000 sq. ft. shopping center. **$5,000,000.** Walter P. Moore, 2 Pinedale St., J. L. Davis, 9240 Kenilworth St., W. B. Joseph, M & M Bldg., Houston, engrs. CD 4/17, under BA.

▲ Ont., **Toronto**—OFFICE—Union Carbide Canada Ltd., 2221 Yonge St., plans by Shore & Moffat, 51 Wellington St. W., 15 to 20 story office bldg., 300 ft. frontage, parking facilities 200 cars, 2.5 acre site, Eglinton Ave. E., **$6,000,000.**

INDUSTRIAL BUILDINGS

Ala., **Edmonton**—SHOP—Dominion Bridge Co. Ltd., Lachine, Que., constr. structural fabrication shop to be erected on new property. **$500,000.**

▲ Fla., **St. Petersburg**—PLANT—Air Assocs., Inc., John Godsey, Pres., Teterboro, N. J., 200,000 sq. ft. plant and headquarters, 75 acres industrial area of airport, **$2,000,000.**

▲ Ky., **Louisville**—WAREHOUSE, etc.—Jones & Laughlin Steel Co., 2525 S. Fourth St., 90,000 sq. ft. warehouse and office. **$1,000,000.**

Mass., **Shrewsbury**—MANUFACTURING—Phalo Plastics Corp., 25 Foster St., Worcester, mfg. bldg., off Boston Turnpike. **$500,000.**

▲ Mont., **Anaconda**—PLANT—Anaconda Co., Anacondia, pilot plant for extracting alumina from low grade domestic clays. **$1,000,000.**

Neb., **Omaha**—GRAIN ELEVATOR—Cargill, Inc., Grain Exchange Bldg., Minneapolis, Minn., grain elevator, 17-acre site south of South Omaha Bridge near Missouri River. **$500,000.**

▲ N. M., **Grants**—MILL—The Homestake Mining Co., 100 Bush St., San Francisco, Calif., uranium processing mill. **$5,300,000.** Constr. in 1957.

▲ O., **Bryan**—PLANT—Aro Equipment Corp., 1949 Erie Ave., 60,000 sq. ft. plant addns., incl. equipment replacement. **$2,500,000.**

▲ Tenn., **Memphis**—PLANT—E. I. duPont deNemours & Co., duPont and Nemours Bldgs., Wilmington, Del. sodium and chlorine production unit addn. to plant. **$1,000,000.**

▲ Tex., **Deer Park**—ACETYLENE PLANT—Diamond Alkali Co., Deer Park, acetylene park. Over **$2,000,000.**

▲ Tex., **Deer Park**—PLANT, WAREHOUSING Diamond Alkali Co., Deer Park, plant expansion, chlorine and caustic production, **$4,000,000;** warehousing, **$150,000;** water sys. **$50,000;** earthwork, grading, **$60,000. Wyatt C. Hedrick,** 5201 Fannin St., Houston, consult. engr.

▲ Tex., **El Paso**—REFINERY—El Paso Natural Gas Co., E.P.N.G. Co. Bldg., refinery unit to blend alkylate with motor gasoline into higher premium motor fuel. **$5,000,000.** CD 1/20.

Tex., **Houston**—PLANT—Arco Rubber Processors, 4033 Homestead St., plant, 28-acre site, LaPorte Rd. **$500,000.**

▲ Tex., **Odessa**—PLANT—El Paso Natural Gas Co., General Tire & Rubber Co., et al, c/o El Paso Natural Gas Co., E.P.N.G. Co. Bldg., El Paso, synthetic-rubber plant. **$10,000,000.**

▲ Tex., **Odessa**—PLANT—El Paso Natural Gas Co., E.P.N.G. Co. Bldg., El Paso, alkylation plant. **$2,000,000.**

▲ Tex., **San Antonio**—PLANT—American Can Co., Lockwood and Clinton Sts., 1 story, 115,000 sq. ft. steel can mfg. plant with aluminum-sandwich panel walls, steel deck, etc. 275 million cans annual capacity. **$1,000,000.**

Tex., **San Antonio**—PLANT—Gillespie Motor Co., 301 Broadway, auto dealership plant, between Braham Blvd., Haywood and Cunningham Aves. **$500,000.**

▲ Ont., **Oshawa**—PLANT—General Motors of Canada, Ltd., Oshawa, 80,000 sq. ft. addn. to plant to make luxury cars, **$2,000,000.** CD 1/20.

UNCLASSIFIED

Florida—RURAL DISTRIBUTION LINES—Peace River Valley Elec. Membership Corp., Wauchula, 127 mi. electric distr. lines, sub-station facilities and sys. imprvs. **$835,000.**

▲ Louisiana—ELECTRIC DISTRIBUTION LINES—Southwest La. Electric Membership Corp., Lafayette, 333 mi. electric distr. lines, addnl. headquarters facilities and sys. imprvs. **$1,000,000.** CD 6/4/53.

Minn., **Bloomington (P. O. Minneapolis)** — PARK — Village. H. E. Kossow, clk., at Nov. 6 election, village will vote on authorizing **$600,000** bond issue, development 5-year park program, F. Laska, village engr. CD 12/13/54.

N. J., **Bayonne**—STADIUM—City, City Hall, municipal stadium, near Bayonne High School. **$500,000.**

▲ N. J., **Passaic**—PARKING RAMP—City, Parking Auth., Passaic, municipal parking ramp, incl. paving, bldg., installation of lighting. **$2,000,000.** Ramp Builders Corp., 230 Park Ave., New York, N. Y., consult. engrs.

Ohio—GAS LINE—Ohio Fuel Gas Co., 109 N. Front St., Columbus, O., 18.8 mi. natural gas pipe line to serve McCutchenville and increase supplies to Dayton and Toledo areas. **$772,360.**

Oklahoma — ELECTRIC TRANSMISSION LINE — Grand River Dam Auth., Vinita, 20 mi. 69 k.v.a. electric transmission line, Ottawa Co. **$500,000.** W. B. Hoss, Vinita, engr. CD 12/4/50.

▲ Okla., **McAlester**—COAL MINE—Armco Steel Corp., c/o Sheffield Div., Industrial Rd., Houston, Tex. opening new coal mine. **$5,000,000.** CD 2/14/51.

▲ Texas and Colorado—GAS TRANMISSION LINE—Colorado Interstate Gas Co., 700 S. Colorado Blvd., Denver, Colo., 100 mi. high pressure natural gas transmission line, from Amarillo, Tex. to Kit Carson, Colo., Springfield to Pueblo, Colo. **$10,000,000.** CD 3/23/55.

▲ Texas — GAS LINE — El Paso Natural Gas Co., E.P.N.G. Co. Bldg., El Paso, 240 mi. gas line from Odessa to El Paso. **$15,000,000.** CD 2/5/53.

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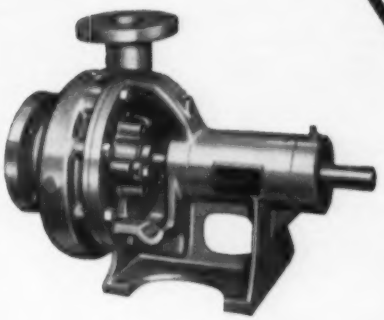

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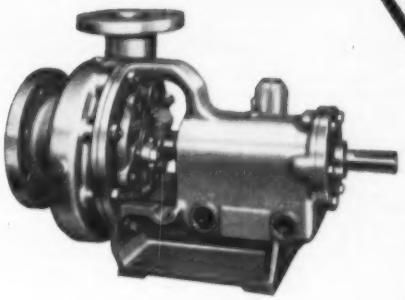

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oil lubricated housing

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 30 Massachusetts

STREETS AND ROADS

October 30 Massachusetts

BUILDINGS—BA

▲ **N. H., Durham**—LIBRARY—BA 11/18—University of New Hampshire, office of president, Durham, library. $1,500,000. Tracy & Hildreth, 4 Davis Court, Nashua, archts. J. U. Wiesendanger, East Winthrop, Me., constr. engrs. CD 10/3.

BUILDINGS—LB & CA

▲ **Merritt-Chapman & Scott Corp.**, 261 Madison Ave., New York 16, N. Y. CA, converting sulphite pulp mill to new magnesium base process, incl. BUILDINGS to house evaporator and recovery boiler equip., install all equip., make necessary changes in existing facilities to tie them in with new plant units, BERLIN, N. H. Brown Co., Berlin, N. H. E. & B. Cowan, 5400 Pare St., Montreal, Que., consult. engrs. CD 11/17/54.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 30 Maryland — November 1 New Jersey
November 15 New York

STREETS AND ROADS

October 30 Maryland — November 15 New York

BUILDINGS—BA

▲ **Del., Newark**—SCHOOL—BA 10/31—Newark Special School Dist., Newark, Brookside Junior High School. $2,000,000. E. William Martin, archt., and Charles K. Kain, engr., both 830 West St., Wilmington, Del. CD 9/26.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—John W. Johnson, state supt., Dpt. Pub. Wks., The Gov. Alfred E. Smith State Office Bldg., Albany.

N. Y.—**Bates and Rogers Construction Corp.**, 600 West Jackson Blvd., Chicago, Ill, LB **$9,660,000.** Est $9,707,000. (1 bidder) constr. 2.38 mi. four-lane divided stretch of State Thruway's Niagara Section and 0.93 mi. of access roads between Porter Ave. and Wayne St. in Buffalo, Erie Co.

N. Y.—No bids received 10/18/56. Est. $3,408,000. constr. 0.21 mi. elevated portion of State. Thruway's Niagara Section, and 0.11 mi. access ramps between Washington and Franklin Sts. in Buffalo, Erie Co.

N. Y.—**H. F. Stimm Inc.**, 693 Ellicott Sq. Bldg., Buffalo 3, N. Y. LB **$4,177,108.** Est. $4,457,000. (1 bidder) constr. 0.83 mi. four-lane divided segment of State Thruway's Niagara Sect. and 0.74 mi. access roads between Amherst and Ontario Sts. in Buffalo, Erie Co.

N. Y.—No bids received 10/18/56. Est. $188,000. constr. 1.18 mi. b. conc. connecting road between Baseline Rd. and the State Thruway in Buckhorn Island State Park on Grand Island, Erie Co.

N. Y.—**Davis Construction Corp. & Tuckahoe Construction Co., Inc.**, 116 Columbia Ave., Tuckahoe, N. Y., LB **$2,726,053.** Est. $3,377,000. (4 bidders) constr. 1.176 mi. sect. of six-lane divided Horace Harding Expressway Exten. and 4.58 mi. access roads between Shelter Rock Rd. and Willis Ave. in East Hills, incl. bridges to carry the Expressway over Searingtown Rd. and Willis Ave. and structure to carry Shelter Rock Rd. over Expressway, Nassau Co.

N. Y.—**White Oak Excavators, Inc.**, 61 East Main St., Plainville, Conn., LB **$599,297.** Est. $659,000. (2 bidders) grading, drainage work on 1.21 mi. connection from State Thruway to Utica's north-south arterial route, south of Thruway between Horation St. and N. Genesee St. and 0.62 mi. of access roads, Oneida Co.

N. Y.—**S. J. Groves & Sons**, 500 Wesley Temple Bldg., Minneapolis, Minn., LB **$7,984,821.** Est. $8,147,000 (1 bidder) constr. 2.67 mi. sect. of Oswego Blvd. arterial route in Syracuse from James St. across Hiawatha Blvd. and New York Central R.R. to an interchange at Park St. incl. will be building of 5.96 mi. of access roads and eighth structures, Onondaga Co.

N. Y.—**Broadway Maintenance Corp.**, 22-09 Bridge Plaza North, Long Island City, N. Y., LB **$79,876.** Est. $85,000. (2 bidders) installing traffic signal sys. along 5.13 mi. sect. of Massena's South side arterial route (Rte. 37) from Rte. 56 intersection northeastward to Robinson Tunnel, St. Lawrence Co.

N. Y.—**Mount Vernon Contracting Corp.**, 439 No. Terrace Ave., Mt. Vernon, N. Y. LB $5,717,050. Est. $5,950,000. (5 bidders) constr. 1.15 mi. six-lane divided portion of State Thruway's New England Sect. and 5.19 mi. of access roads between Boston Post Rd. in Rye and Fox Island Rd. in Port Chester, Westchester Co. Bids Oct. 18. CD 9/25.

▲† **Great Lakes Dredge & Dock Co.**, Morgan Bldg., Buffalo, N. Y. LB **$3,483,075.** approach channel to Grasse River Lock, St. Lawrence Seaway, St. Lawrence River for St. Lawrence Seaway Development Corp., CIVENG-30-023-56-71, NEW YORK. U. S. Eng., Engineer Park, Niagara and Bridges Sts., Buffalo 7, N. Y. Bids Oct. 11. CD 9/20.

▲† **C. J. Langenfelder & Son, Inc.**, 8427 Pulaski Hy., Baltimore, Md. LB **$12,544,177** base bid, **$8,831,140** alt. bid, (11 bidders) airfield runway and apron imprvs., Olmsted Air Force Base, MIDDLETOWN, PA. U. S. Eng., 24 St. and Maryland Ave., Baltimore 3, Md. Bids Oct. 16. CD 10/10.

BUILDINGS—LB & CA

▲ **Brewster Heights Homes**, c/o Schulman & Soloway, archts., 100-15 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$7,500,000.** 500 HOUSES on 225 acres on Hillside Rd. near Rte. 6, BREWSTER, N. Y.

▲ **Wenwood at Brookville Homes**, c/o Kern Realty, 124-26 Queens Blvd., Kew Gardens, N. Y. Owner Builds. **$2,300,000.** 63 HOUSES on 126 acre tract at Cedar Swamp and Compatch Rds., BROOKVILLE, N. Y.

▲ **Colmar Constr. Co.**, 364 Gold St., Brooklyn 1, N. Y. LB $1,721,000. general constr. PUBLIC SCHOOL 138, Pugsley and Olmstead Aves., Bronx Boro, NEW YORK, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Oct. 16. CD 9/10.

▲ **West Wind Estates**, c/o Alwin Cassens Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. **$2,400,000.** 200 HOUSES on tract at Sunrise Hy. and Sycamore Ave., OAKDALE, N. Y.

▲ **Pielaet Constr. Co.**, Victor Pielaet, 76 S. Lake Dr., Red Bank, N. J. Owner Builds. **$1,650,000.** 100 HOMES, Harvey Ave. and Newman Spring Rd., LINCROFT, N. J. Lester Cohen, 234 Clinton Pl., Hackensack, N. J., archt.

▲ **James D'Agostino**, 133 Cedar Lane, Teaneck, N. J., Owner Builds, **$4,500,000.** 75 addnl. HOUSES at Stonehurst Manor, on tract bounded by Kent Road and East Clinton Ave., TENAFLY, N. J. Harsen & Johns, Summit St. and E. Railroad Ave., Tenafly, archts.

▲ **Gramercy Gardens Homes**, c/o Max Rosenfeld, archt., 89-31 161 St., Jamaica 32, N. Y. Owner Builds. **$3,000,000.** 250 HOUSES on tract at Montauk Hy., OAKDALE, N. Y.

▲ **Joseph Robbins**, 130 Flemer St., Springfield, N. J. Owner Builds. **$4,000,000.** 135 HOUSES, Central Ave., Woodmere section, to be known as Mountainside Park, MOUNTAINSIDE, N. J. Rotwein & Blake, 1018 Stuyvesant Ave., Union, N. J., archts.

▲ **Cleveland Yerger & Sons**, 1424 York Rd., Abington, Pa. Separate Contracts. **$2,000,000.** RESIDENTIAL DEVELOPMENT, 162 units, Sumneytown Pike, NORTH WALES, PA.

▲ **Baltimore Contractors, Inc.**, 711 S. Central Ave., Baltimore 2, Md. CA **$1,804,645.** brick, concrete, steel Francis Scott Key MEMORIAL HALL, and new LABORATORY, ANNAPOLIS, MD. St. Johns College, Annapolis, Md. Bids Aug. 30. CD 8/13.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 30 North Carolina — October 31 Louisiana

STREETS AND ROADS

October 30 North Carolina — October 31 Louisiana

BUILDINGS—BA

▲ **La., Gretna**—SHOPPING CENTER—BA 11/8—August Perez & Assoc., archts., 314 Audubon Bldg., New Orleans, 200,000 sq. ft., West Side Shopping Center, 18 stores, for August Perez & Assoc., 314 Audubon Bldg., New Orleans, La. $2,250,000.

HEAVY CONSTRUCTION—LB & CA

▲† **F & C Engineering Co.**, 3018 Leeland St., Houston, Tex. CA **$5,203,783.** control structure, Concordia Parish, Inv. 57-34, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La. CD 10/8, under LB.

BUILDINGS—LB & CA

▲ **Booth & Flinn Co.**, 1942 Forbes St., Pittsburgh, Pa., CA, Est. **$90,000,000.** third unit of Kammer POWER PLANT, 225,000 kw. CAPTINA, W. VA. Ohio Power Co., 301 Cleveland Ave., Canton, O. CD 11/18/55, under O., Clarington.

▲ **Walsh Constr. Co.**, Box 241, Bunnell, Fla., **B. Perini & Sons, Chattahoochee, Fla. and Frank J. Rooney,** 5880 N. E. 4 Ave., Miami, Fla., CA, Est. **$20,000,000.** CEMENT PLANT, 2 mi. north of Tamiami Trail and 1 mi. east of South Fla. Flood Control Dyke, Dade Co., MIAMI, FLA. Lehigh Portland Cement Co., James S. Young, pres., 718 Hamilton St., Allentown, Pa.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

November 8 Michigan

BUILDINGS—BA

▲ **Ill., Wheaton**—SCHOOL—BA 11/2—Franciscan Fathers of Sacred Heart Province, 310 Bridge St., Joliet, St. Francis High School, west side of Roosevelt Rd. $2,000,000. Belli & Belli, 8 S. Dearborn St., Chicago, archts. CD 9/15/55.

▲ **Ill., Chicago**—SCHOOLS—BA 11/9—Bd. Educ., 228 N. La Salle St., 2 story, brick Crispus Attucks Elementary School, Pershing Rd. and State St. $1,500,000, Fugard Burt Wilkinson & Orth, 520 N. Michigan Ave., archts.; Wm. C. Reavis Elementary School, 50 and Drexel Blvd., $350,000, Rudolph & Young, 116 S. Michigan Ave., archts. CD 12/1/56.

▲ **Wis., Milwaukee**—MUNICIPAL, etc.—BA 12/14—City, City Hall, 11 story, bsmnt. 150x256 ft. municipal bldg. and 74x236 ft. garage, $7,000,000. Plans deposit $150. E. A. Schmidt, city engr. Eschweiler & Eschweiler, 720 E. Mason St., Milwaukee, archts. CD 6/29/55.

HEAVY CONSTRUCTION—LB & CA

▲† **United Constr. Co.**, 1204 Lincoln Ave., Pittsburgh, Pa., CA **$1,658,775,** Special AAA facilities for Cleveland Defense Area at Site CL-34, vicinity of Cleveland, Cuyahoga Co., ENG-36-058-56-34, OHIO. U. S. Eng., 925 New Federal Bldg., Pittsburgh 19, Pa. Bids Sept. 11. CD 9/14, under LB.

▲ **G. E. Tillman Co., Inc.**, 702 N. Locust St., Centralia, Ill. LB **$2,739,200,** est. $2,997,300. water pumping and filtration plant, SPRINGFIELD, O. City, City Hall, Springfield, O. CD 10/13/54.

▲ **S. A. Healy Co. and Gargaro Co.**, 6561 East Seven Mile Rd., Detroit, Mich. (joint bid) CA **$1,936,480.** Milk River Drain, Grosse Pointe Woods, DETROIT, MICH. Milk River Drain Drainage Bd., Christopher J. Mulle, chn., 3523 Cadillac Tower, Detroit, Mich. CD 10/11, under LB.

BUILDINGS—LB & CA

▲ **Heller-Murray Co.**, 222 W. Rayen St., Youngstown, O. CA Est. **$2,000,000.** OFFICE BLDG., BOARDMAN, O. Youngstown Sheet & Tube Co., Stambaugh Bldg., Youngstown, O. CD 8/30.

▲ **Joseph J. Duffy Co.**, 4994 N. Elston Ave., Chicago, Ill., CA, **$1,695,980** Wm. Howard Taft HIGH SCHOOL addn., 5625 N. Natoma Ave., CHICAGO, ILL. Bd. Educ., 228 N. La Salle St., Chicago, Ill. Bids Sept. 21. CD 10/2, under LB.

▲ **Lake Realty Co.**, 28700 Little Mack St., St. Clair Shores, Mich. Owner Builds. **$1,600,000.** Mark-Blair Subdivision, 89 brick HOMES, Martin and 12 Mile Rd., ST. CLAIR SHORES, MICH.

▲ **Winshall Assoc.**, 300 Penobscot Bldg., Detroit, Mich. Owner Builds. **$90,000,000.** Winchester Village, 6,000 HOMES, GOLF COURSE, three SHOPPING CENTERS, COMMUNITY CENTER, etc., SWARTZ CREEK, MICH. Louis Redstone, 10811 Puritan St., Detroit, Mich., archt. Villican-Leman & Assoc., 3036 12 Mile Rd., Berkley, Mich., engrs. CD 5/27/55.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 30 Iowa — November 1 Kansas, Missouri

STREETS AND ROADS

October 30 Iowa — November 1 Kansas, Missouri

▲† **Tex., San Antonio**—ACADEMIC SCHOOL, LABORATORY—BA About 12/14—U. S. Eng., Box 1229, Galveston, academic school bldg. and flight medicine laboratory for Brooks Air Medical School Proj., Brooks Air Force Base. $3,000,000. CD 4/30/52.

BUILDINGS—BA

▲† **Tex., Amarillo**—WAREHOUSE, etc.—BA 11/28—U. S. Atomic Energy Comn., Herring Hotel, Amarillo, constr. 6 concrete walled process structures, 40,000 sq. ft. warehouse bldg., shipping bldg. addn., utilities, fencing, roads and railroad spurs, Pantex Ordnance Plant, near here. $1,800,000-$2,100,000. Mason & Hanger-Silas Mason Co., Inc., Middletown St., Burlington, Iowa, engr.-archt.

HEAVY CONSTRUCTION—LB & CA

▲† **Fegles Constr. Co.**, Wesley Temple Bldg., Minneapolis, Minn. LB $2,336,000, est. $3,021,292. alter existing control shaft and construct foundations for second power plant at Fort Peck Dam, MONTANA. U. S. Eng., Riverdale, N. D. Bids Oct. 9. CD 9/6.

▲ **COLORADO**—State Hy. Dpt., 4201 E. Arkansas St., Denver,

Gardner Constr. Co., Glenwood Springs, Colo., CA, **$1,723,749,** est. $1,532,000. grading, structure 2.017 mi. Valley Hy., I 002-2 (38) Denver Co. Bids Oct. 5, awarded Oct. 9. CD 9/26.

BUILDINGS—LB & CA

▲ **Johnson, Drake & Piper**, Baker Bldg., Minneapolis, Minn. CA Est. **$2,000,000.** general constr. 4 and 3 story sections, 226,000 sq. ft. OFFICE, Wayzata Blvd. and County Hy. 18, GOLDEN VALLEY (P.O. MINNEAPOLIS), MINN. General Mills, Inc., 400 Second Ave. S., Minneapolis, Minn. Bids Oct. 4. CD 8/29.

▲ **Melco Constr. Co.**, 3917 Broadway, Kansas City, Mo. CA Est. **$5,000,000-$10,000,000.** HOSPITAL, on 20 acre tract at Meyer Blvd. and Prospect Ave., KANSAS CITY, MO. Research Hospital, c/o Gustav

(Continued on page 104)

Here's how you can protect your equipment from winter's ravages with VISQUEEN *film.*

Store equipment outdoors in any weather!

protect it with Visqueen® film

VISQUEEN *film is the best moisture barrier under concrete floors.*

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Name_____

Title_____

Products_____

(Continued from page 102)

Nottberg, pres. Hospital Bd. Comn., 23 Rd. and Holmes St., Kansas City, Mo. Gentry & Voskamp, 4 W. 13 St., Kansas City, Mo., archts. CD 1/23/53.

▲ **Long Constr. Co.**, 810 Rialto Bldg., Kansas City, Mo. LB $3,750,000. 24,000 kw TURBINE GENERATOR at Ralph Green Electric Plant in Pleasant Hill, incl. second cooling tower, PLEASANT HILL, MO. Missouri Public Service Co., 3869 Park St., Kansas City, Mo. Bids Oct. 10. CD 9/11.

▲ **Morris & Robertson Contractors**, Wichita Falls, Tex., LB $16,685,000, construct and finance 922 HOUSING UNITS for airmen and families and 613 HOUSING UNITS for officers and families, Capehart Housing, Little Rock Air Force Base, JACKSONVILLE, ARK. U. S. Eng., P. O. Box 867, Little Rock, Ark. Bids Sept. 6, awarded Oct. 11. CD 7/12.

▲ **Missouri Valley Constructors, Inc. & Winston Bros. Co.**, Box 801, Leavenworth, Kan., CA $9,000,000 ELECTRICAL GENERATOR PLANT; CA $100,000 WAREHOUSING or STORAGE; CA $200,000 electric lines, MONAHANS, TEX. Grand total $9,300,000. Texas Electric Service Co., 406 W. 7 St., Fort Worth, Tex. CD 4/26.

▲ **J. F. Pritchard & Co.**, 4625 Roanoke Parkway, Kansas City, Mo., CA Est. $5,000,000. 3,250 b/d catalytic reformer and 3,000 b/d hydro-desulfurizer at REFINERY, CASPER, WYO. Socony-Mobile Oil Co., Inc., 26 Broadway, New York, N. Y. CD 4/18/47

▲ **McDonald Bros.**, 2639 S. Laciena St., Los Angeles, Calif., CA $1,777,425. constr. TEST STAND No. 1 and mech. specialties, Glenn L. Martin Plant, DENVER, COLO. Glenn L. Martin Co., 1845 Sherman St., Denver, Colo. Bids Sept. 4. CD 9/18, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
November 15 California
STREETS AND ROADS
November 14, 15 California

▲† Wash., **Moses Lake**—HANGAR—BA 11/26—Boeing Airplane Co., 7755 E. Marginal Way, Seattle, Zone 4, general contract for painting hangar. Naramore, Bain, Brady & Johanson, 904 7 Ave., Seattle, Zone 1, archts. CD 6/7.

BUILDINGS—SLC

▲ **Utah, Brigham City**—ROCKET FUEL PLANT—Thiokol Chemical Corp., 778 N. Clinton Ave., Trenton, N. J., soon lets contract plant facilities, at test site area, 12 mi. west of here. Total est. $3,000,000. Ashton Evans & Brazier and William J. Monroe, 10 Post Office Pl., Salt Lake City, archts. CD 4/24.

HEAVY CONSTRUCTION—LB & CA

▲ **WASHINGTON**—State Hy. Comn., Olympia, **Woodworth & Co. Inc.**, 1200 E. "D" St., Tacoma, Wash., LB $1,639,758. surf. cement treated base with paving with b. conc. relocating government installations, installing two illumination sys., 3 rein.-con. rigid frame slab bridges and steel plate girder railway bridge on 3.523 mi. Primary State Hy. No. 1, FAP IN-I-ING 001-3 (14) Unit 2. Pierce Co. Bids Oct. 16. CD 10/1.

▲† **Vinson Constr. Co.**, P.O. Box 930, Phoenix, Ariz. CA, $2,143,907, est. $2,061,544. earthwork, concrete canal lining, structures for Putah South Canal and McCoy Creek Wasteway, Solano Proj., Spec. DC 4733, CALIFORNIA. Bureau Reclamation, Dpt. Interior, Winters, Calif. Bids Sept. 5, awarded Oct. 5. CD 9/10, under LB.

BUILDINGS—LB & CA

▲ **Andersen-Westfall Co. Inc.**, 3427 N.E. Halsey St., Portland, Ore., CA Est. $2,000,000. general foundation and structures for Kraft MILL, TOLEDO, ORE. Georgia-Pacific Paper Co., P. O. Box 311, Portland 7, Ore. Bids Sept. 25. CD 9/19.

▲ **C. J. Nimteman Constr. Co.**, Alcala Park, P. O. Box 2422, San Diego, Calif., CA $1,800,000. LAW SCHOOL, LIBRARY, University of San Diego, SAN DIEGO, CALIF. Catholic Diocese of San Diego, c/o 5998 Linda Vista Rd., San Diego, Calif.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
November 7 Ontario

HEAVY CONSTRUCTION—LB & CA

▲ **Marine Pipe Line & Dredging Co., Ltd.**, 640 W. Hasings St., Vancouver, B. C. CA $1,500,000. lay 2, 4 and 8 in. gas distr. sys. for supplying butane within city limits of NANAIMO, B. C. Vancouver Island Gas Co., 431 Wallace St., Nanaimo, B. C. J. M. Pryde Co., Ltd., Calgary, Alta., engr. Awarded Oct. 11.

▲ **Dominion Bridge Co., Ltd.**, Lachine (Montreal) Que. CA, $6,061,640. superstructure for two vertical lift bridges across St. Lambert Lock, Lachine Section of St. Lawrence Seaway, QUEBEC. St. Lawrence Seaway Auth. No. 2 Temporary Bldg., Ottawa, Ont. Awarded Oct. 11. CD 10/9, under LB.

BUILDINGS—LB & CA

▲ **Poole Constr. Co. Ltd.**, 10503 109 St., Edmonton, Alta., CA Est. $6,000,000. 2nd unit, steam-generated POWER PLANT near Wabamun Village, 40 mi. west of Edmonton, ALBERTA. Calgary Power Ltd., 140 1 Ave. N., Calgary, Alta. Montreal Eng. Co. Ltd., 244 St. James St. W., Montreal, Que., engrs. Awarded Sept. 21.

▲ **Burns & Dutton Concrete & Constr. Co. Ltd.**, 5440 1 St. S.W., Calgary, Alta., CA $1,375,335, general contract 8 story, structural steel frame, concrete block, brick, masonry TOLL BUILDING, 120 7 Ave., CALGARY, ALTA. Alberta Government Telephones, 9718 107 St., Edmonton, Alta. Awarded Oct. 10. **Lockerbie & Hole Western**, 10718 101 St., Edmonton, Alta., CA $764,263, mechanical trades for toll building (Calgary, Alta.).

▲ **A. R. Grimwood, Ltd.**, 1129 Kingsway, Vancouver, B. C., CA, $1,658,660. group of 3 BUILDINGS for Faculty of Arts, VANCOUVER, B. C. University of British Columbia, Vancouver, B. C. Awarded Oct. 5. CD 10/4, under LB.

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

▲ **Costain-John Brown Ltd.**, London, England and **Williams Brothers, Ltd.**, Natl. Bank of Tulsa Building, Tulsa, Okla., U.S.A., CA $15,400,000. constr. oil line pumping stations, marine terminals, tank farm facilities, inter-connecting pipe lines, for NATO Proj. TURKEY. Govt. of Turkey, Ankara, Turkey. Contract was secured in competition with Italian and other United States companies. CD 9/15/54.

PUERTO RICO

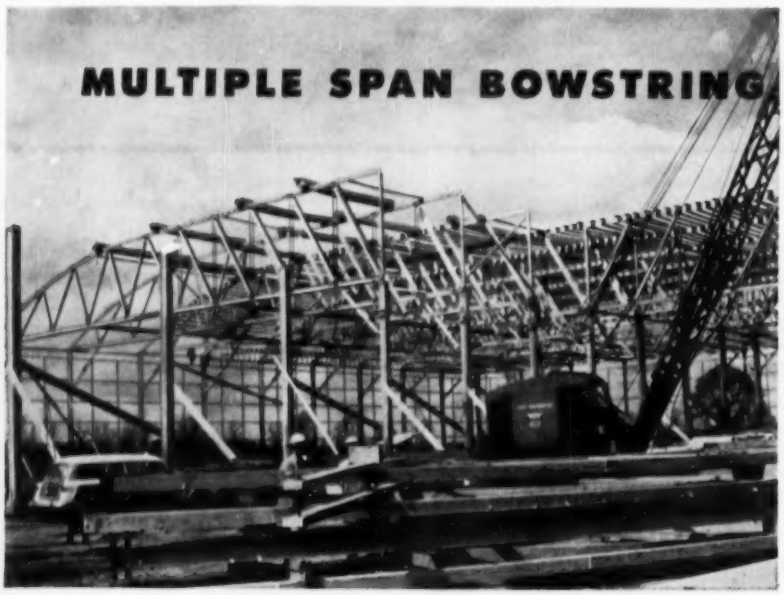
HEAVY CONSTRUCTION—LB & CA

▲ **Gahagan Overseas Dredging Co.** (subsidiary of Gahagan Dredging Corp., 90 Broad St., New York, N. Y.) No. 2 Clemenceau St., Santurce, Puerto Rico. CA $4,865,650. constr. sand or rock fill dam in a dredged trench, placement of stabilizing fill over an area for future constr., vertical sand drains, etc., for Central Market Development, SAN JUAN, PUERTO RICO. Puerto Rico Ports Auth., at office of Exec. Dir. Salvador V. Caro, Building 65, Isla Grande Airport, San Juan, Puerto Rico. Bids Oct. 8. CD 8/31.

FOREIGN

BUILDINGS—LB & CA

▲ **Costain-John Brown, Ltd.**, London, England, CA est. $9,800,000. acrilan acrillic fibre PLANT, COLERAINE, NORTHERN IRELAND. Chemstrand Corp. (Subsidiary American Viscose Corp. and Monsanto Chemical Co.), Decatur, Ala., U.S.A.



Warehouse of new American Can Company plant, Salem, Oregon, is 240'x380'. Primary roof framing is Tim-Truss bowstring trusses by Timber Structures, Inc., spaced at 20'. Design by engineering department, American Can Company. Contractor: Andersen & Westfall, Portland, Oregon.

TIMBER STRUCTURES, INC.

P. O. BOX 3782-C, PORTLAND 8, OREGON

Offices in Ramsey, N. J.; Rochester, N. Y.; Boston; West Hartford; Cleveland; Charlotte; Chicago; Centerline, Mich.; Kansas City; Kirkwood, Mo.; Wichita; Minneapolis; Des Moines; Memphis; Dallas; Houston; Birmingham; Seattle; Spokane; Denver.

TIMBER STRUCTURES, INC. OF CALIFORNIA
Richmond • Beverly Hills • Sacramento
Local Representatives throughout the United States and Canada

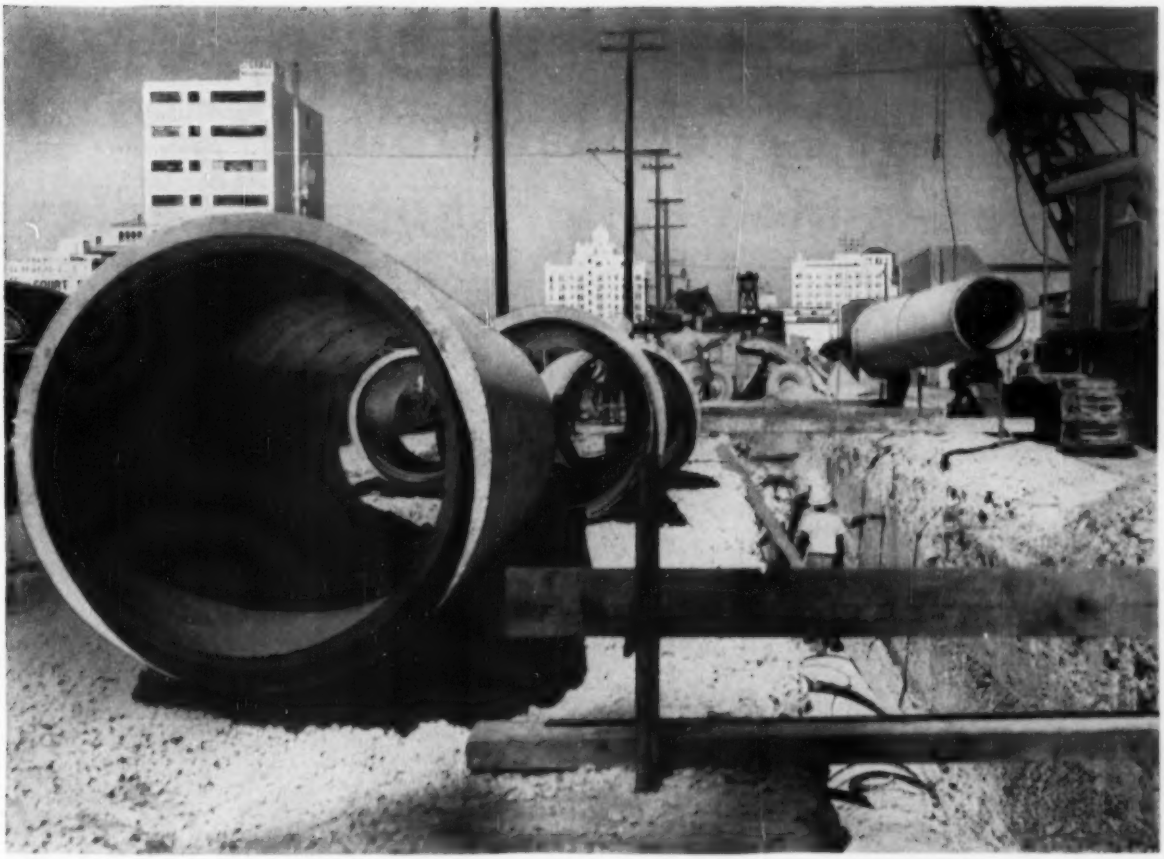
TRUSSES

with no valley build-up

• With heavy monochord timber trusses supporting 91,200 square feet of roof, there are only 19 interior posts in this huge warehouse. Upper truss chords rising from the sidewalls give drainage away from the center without expensive valley build-ups.

Such adaptability is only one of the many advantages of the Tim-Truss. Others are dimensional stability of heavy glued laminated chords, effective resistance to destruction by fire, and open, uncluttered appearance.

Detailed information on engineered timber trusses is included in the brochure, "Modern Construction". Get your copy from your nearest Timber Structures representative, or write us for it.



Miami, Florida, builds gigantic sewer system with reinforced *CONCRETE PIPE*

Miami is spending $27 million to end the dangerous and obnoxious pollution of the Miami River and Biscayne Bay caused by the discharge of raw sewage through more than 100 drains into these waters.

The project includes a new sewage treatment plant, six pumping stations, huge intercepting sewers, a 3-mile subaqueous line to the treatment plant on Virginia Key and an ocean outfall. In all, 6½ miles of reinforced concrete pipe, ranging in diameter from 24 in. to 108 in., will be used.

Like Miami, hundreds of cities use concrete pipe for long, economical sewer service. It's a fact that concrete pipe sewers have given ***low-annual-cost*** service for 75, 85, 100 years and more.

Concrete pipe solves many difficult sewer problems because it has (1) the strength to withstand severe impact and to sustain heavy overburdens, (2) the smooth interior surface to resist abrasion and provide maximum hydraulic capacity and (3) the uniformly dense structure and tight joints to insure minimum infiltration and leakage in any pipeline service.

Concrete pipe is moderate in first cost, requires little or no maintenance and serves extra long. It delivers ***low-annual-cost*** sewer service. That is appreciated by civic officials and taxpayers alike.

PORTLAND CEMENT ASSOCIATION

33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

Photo at top shows a 36" concrete pipe line being laid along S.W. 3rd St. near 2nd Ave. S.W. in Miami.

In the photo at the right workmen are placing the last section of 60" concrete pipe in an elbow of the line at corner of Biscayne Boulevard and 38th St.

Gulf products and fine service
keep equipment rolling at seven million dollar shopping center

Oil is checked by Mr. Al Lugano, at right, and Mr. Edward Striffler, Gulf Sales Representative. This bulldozer has been operating on Gulfpride H. D. Select for more than 8700 trouble-free hours.

A quarter of a million cubic yards of earth will be moved in constructing the new Essex Green Shopping Plaza in West Orange, N. J. This seven million dollar shopping plaza, built on the site of an old golf course, will have 500,000 square feet of store area and parking space for 3500 cars.

Gulf products are used exclusively on this project by Lugano Brothers, Inc., of Belleville, N. J. In fact, Lugano Brothers have used nothing but Gulf products for 12 years . . . because they know they can always depend on Gulf for quality products, helpful petroleum engineering counsel and prompt delivery.

Fourteen hundred Gulf warehouses are at your service, too. Find out exactly how they can serve you. Write for your copy of "Gulf and *Your* Business."

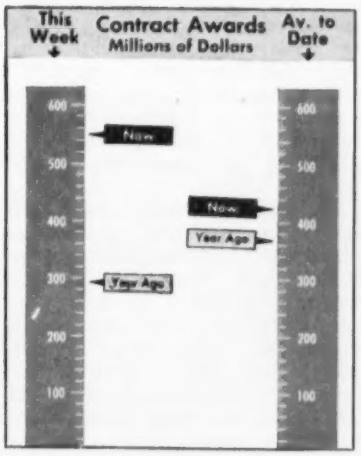
GULF OIL CORPORATION
GULF REFINING COMPANY
1822 Gulf Building
Pittsburgh 22, Penna.

GULF

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

Construction Scoreboard

Activity this Week



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 43 wks 1956	Chge %
	$ millions		
Federal	$31.5	$1,450.2	+21
State and Municipal	99.2	5,460.1	+23
Total Public	130.7	6,910.3	+18
Total Private	419.8	11,425.7	+17
U. S. Total	$550.5	$18,386.0	+17
By Type of Work			
Waterworks	$8.4	$303.9	+31
Sewerage	13.1	506.2	+52
Bridges	3.5	512.5	+26
Highways	28.0	2,054.1	+13
Earthwork, Waterways	13.9	640.3	+39
Buildings:			
Public, Excl. Housg.	40.1	1,721.1	+18
Public Housing	4.0	285.9	+27
Private Housing	162.3	4,698.8	−11
Commercial	43.6	1,603.8	+15
Industrial	191.3	4,525.2	+93
Unclassified	42.3	1,534.2	−8
U. S. Total	$550.5	$18,386.0	+17

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

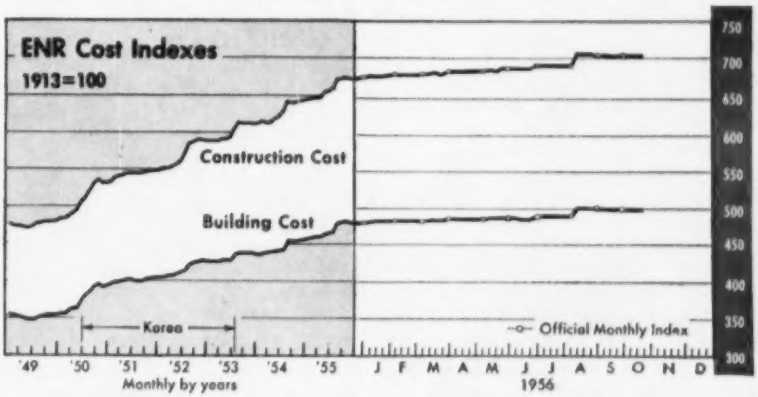
NEW CAPITAL FOR CONSTRUCTION

	Week of Oct. 18 1956	Cum. 42 wks	Chge '55-'56 %
	$ millions		
Corporate Securities	$54.3	$4,001.0	+41
State and Municipal:			
All Except Housing	93.9	3,685.7	+8
Housing	...	42.3	−41
Federal Loans	1.2	134.0	+21
Federal Aid	...	1,070.0	+25
Total Nonfederal	$149.4	$8,933.0	+23
Federal Appropriations:			
In U. S.	$...	$3,460.3	+2
Outside U. S.	...	15.9	−81
Total New Capital	$149.4	$12,409.2	+15

Cost Indexes as of Now

ENR INDEXES (1913 = 100), 20-cities' average	Week of Oct. 18 1956	% Change from Sept 20 1956	% Change from Oct. 20 1955
Construction Cost	704.12	+0.04	+4.5
Building Cost	499.85	+0.06	+4.3

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.



BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	Sept. 30 1956 (millions)	% Change from last Month	% Change from last Year
Total U. S. (ENR reported)	$102,592	+0.9	+14.7
By Ownership—			
Private	43,937	+1.4	+19.8
State & Municipal	44,973	+0.4	+11.8
Federal	13,682	+1.1	+8.9
By Type of Work—			
Waterworks	2,173	+4.0	+13.5
Sewerage	3,102	0	+4.2
Bridges	2,877	−0.6	+5.8
Highways	11,605	−0.9	+3.4
Earthwork, Waterways	11,334	+0.6	+2.0
Public Buildings	18,387	+1.7	+15.7
Industrial Buildings	16,461	+2.8	+26.0
Commercial Buildings	17,993	+0.9	+21.4
Unclassified, Private	9,483*	+0.03	+7.9
Unclassified, Public	9,177	+0.03	+32.2
By Regions—			
New England	5,798	+1.0	+16.5
Middle Atlantic	21,704	+1.6	+12.8
South	12,314	+1.6	+13.1
Middle West	17,715	−0.5	+15.1
West of the Mississippi	23,826	+1.2	+10.8
Far West	21,235	+0.7	+21.7

*Includes private bridges, $90 million.

FLOW OF NEW PROJECTS INTO THE BACKLOG

	Sept. (millions)	1956 9-months	% Change from '55 Mo.	% Change from '55 Year-Cum.
Total U. S. (ENR reported)	$1,950	$19,081	−38	+7
By Ownership—				
Private	976	9,926	+42	+28
State & Municipal	760	7,374	−63	−19
Federal	214	1,781	−44	+74
By Type of Work—				
Waterworks	99	379	+73	−14
Sewerage	40	412	−0.5	+41
Bridges	6	331	−67	−47
Highways	258	1,270	+110	−64
Earthwork, Waterways	105	621	−94	−71
Public Buildings	421	3,659	+50	+68
Industrial Buildings	601	4,656	+243	+63
Commercial: Mass Housing	153	2,475	−29	+2
Other Bldg	189	2,011	+39	+26
Unclassified, Private	34	784**	−79	−14
Unclassified, Public	45	2,483	−84	+166

**Includes private bridges, $13.5 million.

Architects' New Business Climbs 34%

Architects in the heavy construction field established a record volume for new construction design work during 1955.

They signed up 7,581 jobs with a total estimated cost of nearly $8.1 billion.

This all-time high in dollar value of new projects went to 3,110 architects, each of whom had $100,000 or more in new business for the year, as reported by ENGINEERING NEWS-RECORD and CONSTRUCTION DAILY.

The number of firms in the $100,000-and-up bracket rose 4% during 1955, while the number of jobs increased 6% and the dollar value of new jobs zoomed 34%.

Although dollar volume set a new record, there was a slight decline in the number of firms and in the number of projects.

Commercial building, private mass housing and public buildings were the major sources of the added new business for architects in 1955.

The total value of work in these three categories increased 28%, to $7.1 billion, or about $1.6 billion or more than in 1954.

The biggest percentage gain, however, in new business was registered for industrial building. Dollar value of this type of work soared 79% above 1954 to about $500 million.

The number of architects active in the industrial design market increased by 11%.

Architects' interest in other types of heavy construction increased sharply last year. The dollar value of design business other than industrial, housing, commercial and public buildings, jumped 148% to reach a total of $431 million. Most of this work was in the airport, sewerage and unclassified construction fields, although there were substantial percentage gains in all categories.

The volume of airport design work, handled by architects, for example, totaled $160.2 million last year, with 77 firms each taking on $100,000 or more new business in this field.

In contrast, unclassified construction totaled only slightly more in dollar volume than airports, $166.4 million for unclassified, but individual projects were smaller and there were architects sharing the business.

How Architects* New Business in '55 Compared with '54

As reported by ENGINEERING NEWS-RECORD and CONSTRUCTION DAILY

	All Architects Per Cent Change '54–'55			Total 1955 Volume of All Types: $1,000,000 or More Per Cent Change '54–'55			$500,000–$1,000,000 Per Cent Change '54–'55			$100,000–$500,000 Per Cent Change '54–'55		
	Number of		$	Number of		$	Number of		$	Number of		$
Type of Work	Firms %	Projects %	Volume %	Firms %	Projects %	Volume %	Firms %	Projects %	Volume %	Firms %	Projects %	Volume %
Building												
Industrial Buildings	+11	+12	+79	+15	+19	+106	+ 2	+ 9	+29	+12	+ 3	+ 2
Mass housing, commercial and public buildings	+0.3	+ 4	+28	+11	+10	+33	− 2	− 9	− 1	−17	−17	−10
Total	....	+ 5	+31	....	+10	+35	....	− 8	+ 2	....	−12	− 8
Other Than Building												
Waterworks	− 7	+46	+297	+20	+88	+1097	....	....	....	−100	−100	−100
Sewerage	+118	+123	+3223	+86	+100	+3454	0	0	+100	+500	+500	+852
Bridges	+50	0	+878	+200	+100	+2345	0	0	0	−100	−100	−100
Highways	+ 7	+43	+150	+33	+82	+275	−100	−100	−100	−100	−100	−100
Earthwork, irr., drain	+70	+73	+136	+77	+80	+146	....	....	....	−100	−100	−100
Airports	+22	+26	+56	+38	+40	+60	0	−31	+21	−30	−30	−42
Unclassified	+23	+24	+160	+35	+35	+211	+58	+48	+30	+ 4	− 9	+ 8
Total	....	+31	+148	....	+46	+170	....	+29	+33	....	−16	− 7
Federal (incl in above)	+65	+29	+56	+82	+29	+58	−28	−28	−17	+180	+267	+249
All Heavy Construction	+ 4	+ 6	+34	+15	+12	+39	+ 1	− 5	+ 3	−10	−12	− 8

*Not including architect-engineers who were reported separately

Architect* New Business in 1955 – By Type of Work

As reported by ENGINEERING NEWS-RECORD and CONSTRUCTION DAILY

	All Architects Number of		$ Volume	Total 1955 Volume of All Types: $1,000,000 or More Number of		$ Volume	$500,000–$1,000,000 Number of		$ Volume	$100,000–$500,000 Number of		$ Volume
Type of Work	Firms	Projects	Millions	Firms	Projects	Millions	Firms	Projects	Millions	Firms	Projects	Millions
Other Than Building												
Waterworks	13	19	5.2	12	15	4.4	1	4	0.7	0	0	0
Sewerage	24	29	86.4	17	22	85.3	1	1	0.2	6	6	1.0
Bridges	3	2	4.9	3	2	4.9	0	0	0	0	0	0
Highways	16	20	5.0	16	20	5.0	0	0	0	0	0	0
Earthwork, irrig., drainage	17	19	4.5	16	18	4.4	1	1	0.1	0	0	0
Airports	77	148	160.2	62	132	154.1	8	9	4.7	7	7	1.3
Unclassified	189	243	166.4	109	157	146.9	30	34	9.1	50	52	10.5
Total	....	480	430.6	....	386	403.0	....	49	14.8	....	65	12.8
Building												
Industrial	636	849	495.9	270	431	404.8	103	142	45.7	283	276	45.4
Mass housing, commercial and public buildings	2,662	6,252	7,135.3	1,469	4,874	6,543.2	597	775	381.5	596	603	210.6
Total	....	7,101	7,631.2	....	5,305	6,948.0	....	917	427.2	....	879	256.0
Federal (incl. in above)	139	205	261.7	106	165	249.6	13	18	7.2	20	22	4.9
All Heavy Construction	3,110	7,581	8,081.8	1,574	5,671	7,351.0	683	968	442.0	873	944	268.8

*Not including architect-engineers who were reported separately

Steel Orders Drop

Structural bookings down; August shipments move up

Bookings by structural steel fabricators in August were down for the fourth consecutive month.

New orders totaled 268,273 tons in August, according to reports compiled by the American Institute of Steel Construction. It was the second successive month in which bookings fell below the 300,000-ton mark.

In contrast, orders for fabricated structural steel for each of the 14 months from May 1955 to June 1956 inclusive had topped 300,000 tons.

Part of the August decline in new orders was traced to the steel strike.

The strike upset delivery schedules at the mills, aggravating an earlier shortage. Without delivery promises from the mills, fabricators apparently limited new orders to keep the backlog of bookings within realistic limits.

Another development that probably influenced the downtrend in bookings was a tapering off of industrial building contracts after a record first half. This slowdown could be expected to cause a similar trend in bookings of fabricated structurals.

August bookings were down 14% from the same month in 1955. But the year-to-year decline was not as serious as in July when a 33% drop was reported.

Bookings for fabricated structural steel ran far ahead of last year during the first eight months. Total tonnage ordered topped 2,700,000 tons, 17% above the comparable 1955 period.

But, at this high level, bookings were also running far ahead of shipments. During the first eight months, bookings exceeded shipments by 30%.

Fabricators apparently went into the steel strike with some inventories.

While July shipments (during the strike period) tumbled 120,000 tons under the June total, they were only 50,000 tons under July 1955.

August shipments rose 50,000 tons to a total of 213,495. This came within 64,000 tons of the record monthly average for the first half of 1956 and was within 53,000 tons of the August 1955 mark.

Taking into consideration a normal July dip (because of vacations), loss of fabricated structurals probably was in the neighborhood of 150,000 tons, roughly equivalent to two weeks' output at the record rate maintained during the January-June period this year.

Architect Puts Curve on Triangle

Twenty apartments in length, only one in width, the 21-story apartment house designed for New York City's proposed Park Row slum-clearance development will wind a serpentine course through its triangular site on Manhattan's Lower East Side. The unusual layout will permit cross-ventilation for every one of the 400 apartments.

Designed by Kelly & Gruzen, of New York, architects and engineers for the project, the reinforced concrete building will have 20 residential floors and an entrance floor at grade. Three service cores, each with two high-speed elevators and incinerator shafts, will be readily accessible from dwelling units by way of short open corridors.

As recommended last week by the mayor's Committee on Slum Clearance, headed by City Construction Coordinator Robert Moses, the project will cost $7.7 million, including a retail development, garages and a small park. The housing will be cooperative type, for low middle-income families.

Coordinating consultant to the committee is the New York architectural-engineering firm of Skidmore, Owings & Merrill.

Exporting Technical Know-How

Record total voted as United Nations members make pledge of funds to give technical assistance to underdeveloped areas

Economic development of backward countries received a new lift last week as 63 members of the United Nations pledged a record total of $29,245,000 for 1957's Expanded Program of Technical Assistance.

EPTA, which involves the combined efforts of eight international organizations, helps build up underdeveloped areas. It is concerned primarily with technical assistance rather than economic aid.

Assistance is provided, when requested, by experts who advise and aid in development of plans for projects. Also, a limited amount of equipment and supplies is furnished for demonstration of techniques and training—total cost in 1955 was $2,390,000.

Last year, 101 countries and territories received assistance. Projects included plans to raise industrial and agricultural production, develop transportation and communication, strengthen public administration, improve health and educational standards and promote better working conditions.

By the end of the year, 1,400 international experts were collaborating with their counterparts in less-developed areas on EPTA programs. (The U.S. provided 256 experts.)

Industrial development programs were under way in 46 nations during 1955.

In Brazil, Burma, Indonesia, Iran Mexico and Thailand, experts engaged

(Continued on page 110)

in modernization of sawmills and establishment of technical research centers to increase production of pulp and develop more uses for forest products.

Hydroelectric and steam power plants are being built in Bolivia, India, Iran, Thailand, Venezuela and Yugoslavia, with EPTA aid.

Thirty countries received assistance in development of transportation and communications. In India, this included harbor construction, highway engineering, lighthouse installation, railway operations and shipbuilding.

Irrigation schemes have been particularly active because agricultural production is a chief concern of many of the areas aided. Syria and large river basins such as those of the Ganges-Brahmaputra, the Tigris and the Euphrates get much attention. In Iran alone, there are five separate land and water-use projects.

One irrigation team has been in Iran more than three years. Specialists in irrigation engineering, soil survey, topographical surveying, drainage, hydrology, planning of land use, farm management and agricultural machinery are on the scene.

Comprehensive economic surveys of natural resources, manpower requirements and formulation of national development plans are under way.

EPTA also offers fellowships which enable nationals of underdeveloped countries to obtain training abroad which they can put to use in their own lands. This year, 2,291 fellowships are being awarded.

Seminars, training institutes, and pilot plants also are being established in the underdeveloped areas themselves.

It is to be noted that contributions to EPTA include those from the underdeveloped countries themselves, so to a degree it is a self-help program. The U. S. contribution, however, approximates half of the total.

The organizations participating in EPTA are the United Nations; the International Labour Organization; the Food and Agriculture Organization of the United Nations; the United Nations Educational, Scientific and Cultural Organization; the International Civil Aviation Organization; the World Health Organization; the International Telecommunication Union; and the World Meteorological Organization. The executive heads of these organizations form the Technical Assistance Board.

Meetings of this board are attended by observers from the International Bank for Reconstruction and Development and the International Monetary Fund.

Lenders Seek Easing of Mortgage Rules

A four-point program to ease mortgage credit has been proposed by officials of the National Savings and Loan League.

Tailored to give savings and loan associations greater flexibility in today's tight money market, the changes would:

- Increase the amount of money that savings and loan associations can borrow from Federal Home Loan Banks.
- Permit savings and loan associations to make conventional mortgage loans beyond the present 50-mile limit.
- Enable the Federal Home Loan Bank System to set up additional facilities for secondary market operations.

These changes, could have a marked effect on the U.S. mortgage market because savings and loan associations represent the largest single source of funds for mortgages.

In 1955, savings and loan associations accounted for 37% of all mortgages recorded during the war. Total value of mortgages held by such associations was close to $31 billion.

However, even in the present tight mortgage market, it is unlikely that these rules would be liberalized.

For example, restrictions on the borrowing by savings and loan associations probably will be raised—not lowered. There is a statutory requirement that 6% of the savings liability must be in cash or bonds. Some feel that the percentage should go up.

The move to increase the geographical lending area of the savings and loan associations is more complex.

For amortized conventional mortgages, savings and loan associations can operate within a radius of 50 miles from the home office. Mortgages insured by the Federal Housing Administration, savings and loan associations can operate within a radius of 100 miles, or even farther where the mortgage will be serviced by another insured association in the locality in which the property is situated. For Veterans Administration-guaranteed mortgages, there is no geographical limit, providing the VA guarantee covers at least 20% of the loan.

The move to increase the service area for conventional loans stems from the fact that interest rates are higher and these mortgages are more profitable to the lender.

And, with a drop-off in VA and FHA financing, the one segment of the housing market that has not been hard hit is the higher-priced, custom home category, generally financed with conventional loans.

The pension fund proposal hinges on one major point—the managers of the pension funds determine what investments they will make. All the savings and loan associations can do to tap this source of mortgage money is to "educate" the managers to the idea that their dividends from savings and loan deposits will be high enough to compete with other investment possibilities.

And, the proposal to enlarge secondary market operations through an agency other than the Federal National Mortgage Assn. is not new. It was proposed as long ago as 1940—without any workable plan presented.

Business Briefs . . .

- **Bridge bonds sold**—On its second try, the Washington State Toll Bridge Authority sold a $5,375,000 revenue bond issue to finance construction of a second bridge across the Port Washington Narrows at Bremerton. In late August the authority rejected as too high a bid for the bonds based on an interest rate of 4.56%. This time, the bonds were sold to Eastman Dillon-Union Securities. Effective interest rate: 4.42%.

- **Bond bid rejected**—The Florida Development Commission rejected a single bid for $5.5 million in revenue bonds to finance construction of two bridges and a causeway at Sarasota. It was the second time bond bids were rejected. Some months ago a bid at 4.59% was turned down. Latest interest quote: 5.1%.

- **Price cut**—Canadian plywood producers cut prices from 5% to 13% to meet U.S. competition in Canada.

- **Sell more houses**—The fourth quarter probably will bring an upturn in housing sales, but not in housing starts, according to Joseph B. Haverstick, president of the National Assn. of Home Builders.

- **Gas expansion**—The natural gas industry expects to spend $7.3 billion in the next four years for expansion of transmission and distribution facilities. From 1952 to 1955 the industry spent $4.8 billion.

- **Rockwell sales set records**—Rockwell Manufacturing Co., maker of meters, valves and power tools, set a new nine-month sales record of $81.6 million. Net profit was also at a record high, $6.4 million, up 64% over a year ago.

GOING UP to 14 stories! 9000 cubic yards of concrete plus hundreds of tons of construction materials were moved by an American 3-drum hoist during construction of this modern building.

GOING UP, RIGHT ON SCHEDULE

The hoist on a big job like this gets a real workout—buckets and elevators going up and down hundreds of times a day! Just one hoist breakdown can throw the whole job off schedule! A dependable hoist keeps jobs rolling. That's why tough American Hoists are demanded on all jobs where there's no time for trouble! Anti-friction, self-aligning bearings cut wear to the bone. Machined gears give smooth power flow and job-proved clutches and brakes mean safe load control! All these American Hoist features, plus many more, add up to give you years of trouble-free, low cost hoist operation on every job, regardless of size.

If you want the contractor's story, stop at the next job where you see an elevator at work—it's almost certain to be powered by an American! Ask the owner, and operator too, what they think of their American—then see your American Distributor for details about a line that starts with capacities of 3,000 pounds single line pull!

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Get Set For Your Share..
Equipment that Serves
The owner of a MADSEN Model 481 Asphalt Plant is ready for a share of today's big road-building business and profits. Check the facts below and see why this outstanding plant produces greater owner profits on all types of asphalt mixing jobs.
The MADSEN Model 481 Asphalt Plant shown is a 4000-lb. capacity plant.
It is equipped with an 84" x 30' MADSEN Counter-Flow Dryer, a MADSEN 380 Dust Collector Unit, and the famous MADSEN Model 440 Twin-Shaft Pug Mill Mixer.

FACTS YOU SHOULD KNOW before you buy an Asphalt Plant

THE MADSEN MODEL 481 has years-ahead in-built capacity. It may be purchased as a 4000-lb. capacity unit and may be increased to a 5000-lb. or 6000-lb. plant with relatively minor modification costs.

THE MODEL 481 IS COMPLETELY PORTABLE. Has built-in gooseneck structures, fifth wheel plate, king pin and rear axle mounting brackets.

PLANT FEATURES THE FAMOUS MADSEN Model 440 Twin-Shaft Pug Mill Mixer (Patented) . . . with externally removable sectional liners, ground to precision fit at the factory for complete interchangeability and elimination of fitting in the field. Mixer has improved mixing action, faster discharge and has built-in oversize capacity.

THE MADSEN (Pat.) PRESSURE INJECTION SYSTEM used in the Model 481 pumps asphalt into the mill in 5 to 7 seconds.

THE MODEL 481 FEATURES ALL-AIR OPERATION of bin gates, asphalt pressure injection and mixer gate which reduces operator fatigue thereby increasing daily tonnage. Air-operation is faster, more accurate, which decreases time cycle from bin to truck.

THE EXCLUSIVE MADSEN BIN DESIGN (Patent Pending) used in the Model 481 eliminates segregation, provides uniform aggregate withdrawal, and promotes improved aggregate distribution in the weigh-box.

THE MODEL 481 features "station" greasing of heavy bearings. It's the easiest, safest plant to lubricate.

THE OVERSIZE CAPACITY WEIGH-BOX used in the MADSEN 481 Plant has air-operated gate, 4-point lever suspension, and is roller-mounted so that it may be quickly rolled out of the way for field maintenance.

These facts tell part of the story why more and more MADSEN Asphalt Plants are being used to meet the high production and exacting mix specifications required on today's big turnpike and highway jobs. Get the complete story from your Madsen Distributor or write MADSEN WORKS, Baldwin-Lima-Hamilton Corporation, Construction Equipment Division, P. O. Box 38, La Mirada, California.

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Do You Give Time Off to Vote?

A number of states require employees be given time off with pay and heavily penalize employers for violations

As Election Day approaches employers across the nation are thumbing through the statute books to find out what the law requires about letting employees off the job to vote.

Laws have been passed in 27 states and two territories (see accompanying table) imposing specific obligations on employers together with some rather stiff penalties for violations. Although the laws vary from state to state, the gist of most is this: Employees are allowed a certain amount of voting time off with pay and employers who fail to comply with the law can be fined and sent to jail.

For the information of both workers and employers, the U.S. Labor Department's Bureau of Labor Standards has put out a digest of state requirements. Called "Time Off For Voting Under State Law," it's available as Bulletin 138, 1956 revision.

Here's a run-down of the principal provisions:

• **Coverage**—For the most part, the laws apply to all employees entitled to vote.

But in Arkansas, Indiana and Massachusetts coverage is limited to workers in designated industries such as railroads, mines, mills, factories, schools.

In one case—Alabama—the law applies only in counties with a population of 75,000 to 130,000.

• **Time off**—The amount of time off that must be given usually is specified. Ten states allow two hours, six allow more, some less. In some cases employees must ask for the time but employers usually can pick out the hours to be taken off.

Eight jurisdictions give consideration to the amount of time employees have available between working hours and the opening or closing of polls. In these instances, workers generally are allowed one to four hours, including the intervals between working and polling hours.

In Nevada the distance to polls is also taken into account so that the time allowed for voting varies from one to three hours.

Some states don't specify the time. Ohio, for example, requires "reasonable time," and in Arkansas the workday or shift must end by 4 p.m.

• **Wages**—In 15 states employees must be paid for time taken off the job to vote. The same is true in Alaska and Hawaii. In Colorado and Utah, however, the requirement doesn't apply to workers employed on an hourly basis.

Two states—Alabama and Wisconsin—do allow wage deductions for time off. The laws of eight states don't cover the point.

Although the laws of Illinois and Kentucky prohibit wage deductions, those provisions have been held unconstitutional. Employees can take time off but they don't need to be paid during their absence.

• **Violations**—The penalty provisions of the laws are directed against employers. In only one state—Tennessee—it is a punishable offense for an employee to take time off, not vote and then fail to (1) so inform his employer and (2) refuse to take a pay deduction.

Most states make violation of the law by employers a misdemeanor. In some cases the fines are rather steep—up to $1,000. California imposes a maximum prison sentence of five years.

Two states—Alabama and Nebraska—impose no penalties for violations.

Areas With Vote-Time Laws

Alabama	**Missouri**
Alaska	**Nebraska**
Arizona	**Nevada**
Arkansas	**New Mexico**
California	**New York**
Colorado	**Ohio**
Hawaii	**Oklaloma**
Illinois	**South Dakota**
Indiana	**Tennessee**
Iowa	**Texas**
Kansas	**Utah**
Kentucky	**West Virginia**
Maryland	**Wisconsin**
Massachusetts	**Wyoming**
Minnesota	

There's No Labor Monopoly On Jurisdictional Disputes

In a move that suggests some of the economic arguments embraced in the jurisdictional conflict between craft and industrial unions as well as in the right-to-work dispute, Wisconsin lawyers are trying to obtain a bigger share of the work that stems from workmen's compensation claims.

Members of the Wisconsin Bar are seeking exclusive jurisdiction over the right to represent claimants before the State Industrial Commission. Bulk of the claimants in the past have been represented by themselves or by laymen. Often the laymen have been furnished by the claimant's union as part of its service to members.

The lawyers have complained that the commission is advising workers who file claims that they don't need to hire a lawyer. Not only have the lawyers asked that this practice be stopped, but they also have requested the commission to amend its rules to require that claims be handled by lawyers.

Mitchell Supports Taft-Hartley Change

Last week Secretary of Labor James P. Mitchell offered construction workers and contractors his support in obtaining Taft-Hartley Act amendments that would recognize the "peculiar" problems of the construction industry. But he made it clear on another occasion that efforts of the Administration in that direction have been "sabotaged" in the past by Democratic members of Congress.

Mitchell told members of the laborers union, holding their thirteenth convention in Chicago, that he intends to appoint a joint committee representing both labor and management in the construction industry to consider revision of the law. His object, he said, is to see "if we can't make some sense out of the hodge-podge of Taft-Hartley as it applies to the building trades."

Among the changes the AFL-CIO building trades have consistently sought are legalization of pre-hire contracts, removal of construction workers at a common site from the ban against secondary boycotts, elimination of the mandatory injunction provision and repeal of Sec. 14(b), which supports state right-to-work laws.

But in another address in New York, Mitchell indicated that efforts to change the law would have little chance of success if southern Democrats continued to control the Senate and House Labor Committees. He charged this group with sabotage of President Eisenhower's previous labor proposals and said it was no "mere chance" that most of the right-to-work laws exist in the Democratic south.

(Labor continued on page 114)

U. S. Labor Department specifies . . .

New Highway Rate Procedures

The responsibility imposed upon contractors, both general and sub, by the prevailing wage provisions of the federal highway law has been spelled out at length by the U. S. Department of Labor.

Included in the new account is an explanation of what prevailing wages are, what records must be kept by contractors and for how long, what affidavits of compliance must be furnished, how the law affects employment of apprentices, what compliance investigations must be made, and what rights of administrative appeal will be accorded contractors and workers.

Officially, the explanation appears as a change in Part 5, Code of Federal Regulations, originally issued under Reorganization Plan No. 14 (Hoover Commission) to assure coordination of administration and enforcement of labor standards. The changes were prepared by Stuart Rothman, Solicitor of the Labor Department, and apply only to projects within the Sec. 115 prevailing wage provisions of the Federal-Aid Highway Act of 1956.

• **Contract stipulations**—What those provisions will mean to contractors appears primarily in 13 stipulations that must appear in all highway contracts and subcontracts subject to Sec. 115. Any contract can be canceled for violation of any of the stipulations, among which are these:

• Labor Department wage determinations must be attached to and become part of the contract.

• Wages so determined are straight hourly rates and don't include fringe benefits that contractors may be obliged to pay.

• Only those classifications of labor included in the rate schedule can be employed.

• Wages specified are minimum rates. Contractors may have to pay higher rates. If so, no increase in the contract price will be allowed.

• Wage payments must be made unconditionally and at least once a week, regardless of any labor contract provisions to the contrary.

• Wage schedules must be posted at the site.

• State highway departments may withhold amounts necessary to insure payment of wages.

• The Anti-Kickback Act, designed to prevent wage chiseling, applies. Contractors must submit affidavits of compliance to resident engineers weekly.

• Copies of payrolls must be submitted weekly to the state highway department for transmission to the Bureau of Public Roads.

• Detailed employment records must be kept for three years.

• Only registered apprentices may be employed.

• **Enforcement** — Enforcement responsibility largely is divided between the Commerce and Labor Departments. A procedural distinction is made between willful and nonwillful violations.

Compliance investigations will be made periodically. Employee complaints of violations will be treated as confidential.

Particular attention will be paid to compliance with classifications and to disproportionate employment of laborers, helpers and apprentices.

In cases of wage disputes of substantial proportions, the Secretary of Labor may call a special hearing. Appeals from the hearing examiner's decision may be taken to the Secretary of Labor, whose decision will be final.

Union Wage Gains

Labor Department reports 13-cent increase for year

During the year that ended July 2 the average wage rate for union construction workers climbed another 13 cents an hour, according to the Bureau of Labor Statistics, U. S. Department of Labor.

In its 50th annual survey of union wages in cities of 100,000 or more in population, the bureau last week reported that 95% of the million members of the building trades covered in the survey had received wage boosts during the year, pushing to $3.22 the average hourly rate for union journeymen.

Nearly a fourth of the workers received a 15-cent increase, approximately a fifth received a 10-cent boost. Bricklayer's tenders headed the list with an average gain of 18 cents. Electrical workers followed with 17 cents. Bricklayers and terrazzo workers were next in line with 16 cents.

The average hourly rate for union journeymen as of July 2 varied from $2.92 for paper hangers to $3.62 for bricklayers. For stonemasons and plasterers the average was $3.50. Rates within the trades had a wide variation. Cement finishers and roofers, for example, each had a low of $2.20 and a high of $4.00; carpenters, a low of $2.25 and a high of $3.65.

The average wage scale for laborers and helpers stood at $2.92 an hour on July 2, according to the survey. Average hourly rates, by classifications, ranged from $1.96 for composition roofers' helpers to $2.60 for terrazzo workers' helpers. As in the case of journeymen, a wide variation of rate ranges was found within the various classifications.

Dispute Over Union Policy Hits Chicago Construction

Dissatisfaction with the policies of Local 74 of the lathers union last week caused members of the Chicago Plasterers Association to begin the lay-off of all union lathers. The move could throw 100,000 construction men out of work and seriously affect local construction activity.

Through its attorney, Robert Cusack, the association accused the lathers of restrictive employment practices amounting to a closed shop. It charged the local with refusal to admit new members, to enroll additional apprentices, to permit employment of present apprentices, or to allow members to work with nonunion men. "This is not a lockout or a strike," Cusack said, "but a layoff pending settlement of a dispute."

The local denied the charges and said employers were out to gain control of the local plastering and lathing industry. Union Attorney Leo Segall, indicating that employer criticism was unfounded, asserted that lathers never have been numerous enough to meet peak employment demands.

Right-to-Work Ordinance Proposed in California

A right-to-work law at the municipal level is in the offing at Palm Springs, Calif., where the City Council has given its initial approval to such a measure. According to City Manager Robert Patterson, it's "an expression of policy in favor of the open shop."

State right-to-work laws, banning union membership as a condition of employment, now exist in 17 states. State authority to pass the laws is contained in Sec. 14 (b) of the Taft-Hartley Act. Organized labor, including the building trades, seeks repeal of that section.

The Palm Springs ordinance—believed to be the first of its kind in the nation—comes up for final action this week. It was proposed by the Palm Springs Employers Association, which has opposed attempts of the culinary workers and bartenders union to organize workers in the city.

OFFICIAL PROPOSALS

RATE: **The rate for Official Proposal advertising is $2.10 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.**

CLOSING DATE: **Friday 10:30 A.M. for issue dated the following Thursday.**

SEND COPY TO: **Official Proposal Division, Engineering News-Record 330 West 42nd Street New York 36, N. Y.**

Bids: November 15, 1956

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Public Buildings Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time, on the 15th day of November 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. NICKERSON, District Engineer, 353 Broadway, Albany 1, N. Y.						
Rensselaer (Routes 9 & 20)	FARC 56-100	Boston-Albany, S.H. 202 Schodack Center-Nassau, S.H. 536 Schodack Center-Valatie, Pt. 2, S.H. 5029 Project U-F-368(9)	4.03	Asp. Conc. Opt.=3.60 Mi.; 9" Cem. Conc. Pavt. 46'-54'; Var. Wide=0.36 Mi.; Misc. Work=0.07 Mi.; Widen 2 existing bridges	$75,000 Plans $25	$1,351,000
Schenectady	M-56-8	Movable Dam No. 4, Lock 8E, Erie Canal near Scotia	....	Painting Superstructure & Repairing Sill	$4,500 Plans $10	78,500
DISTRICT No. 4, B. F PERRY, District Engineer, Barge Canal Terminal, Rochester 1, N. Y.						
Monroe	FISH 56-9	Interstate Route Connection No. 7 (Rochester-Bushnell Basin Pt. 2) Project I-1107(3)	2.30 (3.57 Acc.)	9" Cem. Conc. Pavt. 26'-25' Var. Wide=4.99 Mi.; Asp. Conc. Ty. 2A=0.58 Mi.; Misc. Work=0.30 Mi.; 3 Hy. Sups. Comp. I-Beams 181.7', 163' & 164'; 2 Ped. Overpasses I-Beams 148' and 145.5'; 2 Brs. R.C. Arch 28' & 33.8'	$147,000 Plans $50	2,674,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court St., Buffalo 2, N. Y.						
Chautauqua	FASS 56-11	Frewsburg-Kennedy Road C.R. 7, 26 and part of 60 Project S-469(1)	2.46	Asp. Conc. Opt.=2.42 Mi. Misc. Work=0.04 Mi.	$17,000 Plans $15	315,000
Erie	NT 56-7 NTC 56-8 STC 56-10	New York State Thruway—Niagara Sect.—Sub. N1 & N2 (Rossler-Clinton Sts.)	1.41 (2.27 Acc.)	9" Cem. Conc. Pavt. 26'-37' Var. Wide=2.02 Mi.; Asp. Conc. Ty. 2B=1.26 Mi.; Misc. Work=0.40 Mi.; 3 Hy. Sups. Comp. I-Beams 216.3', 191.8' & 217.8'	$210,000 Plans $50	3,742,000
Erie	FINTC 56-4 FINT 56-5 NT 56-6 FIRC 56-92	New York State Thruway—Niagara Sect.—Sub. N-7 (Ontario St.—So. Grand Island Bridge); River Road, S.H. 23; Sheridan Drive, S.H. 9216 & Sheridan Drive ext., S.H. 9333 Project I-865(10)	4.57 (5.53 Acc.)	9"—2 Course Cem. Conc. Pavt. 26'-25' Wide=7.29 Mi.; 9" Cem. Conc. Pavt. Var. Wide=0.24 Mi.; Asp. Conc. Opt.=1.13 Mi.; Asp. Conc. Ty. 2B=0.14 Mi.; Bit. Mac. Ty. 1=0.90 Mi.; Misc. Work=0.40 Mi.; 6 Hy. Sups. Comp. I-Beams 57', 301.3', 173.9', 314.8', 169.5' and 180.1'; 1 RR Sup. Comp. I-Beam 261.9'; 1 RR Sup. I-Beam 195'	$140,000 Plans $100	8,930,000
DISTRICT No. 6, J. H. THOMAS, District Engineer, State Office Bldg., 30 W. Main St., Hornell, N. Y.						
Chemung	FARCC 56-101	Elmira City: East Church St., F.A.C. 54-11 Project U-221(9)	0.04	Installation of Sewer & Misc. Work	$3,500 Plans $10	64,000
DISTRICT No. 8, K. G. RAUER, Acting District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
Columbia	FERC 56-95	Copake Iron Works—Bashbish Falls, S.H. 1790 Project ER-24(1)	0.40	Stream Channel Relocation & Slope Protection	$3,500 Plans $10	64,000
Westchester, N. Y. & Fairfield, Conn.	FINET 56-7	New York State Thruway—New England Section—Sub. NE-5 (Byram River Bridge & Approaches); 2 Cross Roads Project I-1068(14)	0.30 (0.99 Acc.)	9" Cem. Conc. Pavt. 74'-82' Var. Wide=0.30 Mi.; Asp. Conc. Opt.=0.09 Mi.; 16 Sp. Bridge Plate Gird. & Comp. I-Beam 1262.8' Long	$200,000 Plans $50	3,602,000
DISTRICT No. 10, M. E. GOUL, District Engineer, 325 W. Main St., Babylon, Long Island, N. Y.						
Bronx	FICBE 56-3	Cross Bronx Expressway Cont. 1D (Plimpton-Anthony Aves.) Project I-1084(24)	0.94	Demolition	$2,200 Plans $10	40,000
Queens (Rte. 25D)	FAHHE 56-2	Horace Harding Expressway Sect. 1 (Cont. 3) Project I-862(9)	0.86 (3.03 Acc.)	9" Cem. Conc. Pavt. with Carb. Black 26'-36' Var. Wide=0.77 Mi.; 9" Cem. Conc. Pavt. Var. Wide=0.42 Mi.; Asp. Conc. Opt.=2.70 Mi.; 3 Brs. Comp. I-Beams 439.9', 382', and 335.1'; 1 Ped. Overpass Steel Girder 131.5'	$400,000 Plans $100	6,981,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: November 15, 1956

New York State Road Work

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Public Building Law and Highway Law, sealed proposals will be received, until 10:30 A.M., on November 15, 1956 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract B.P. 56-51, Pt. IV for Beach Protection (Three Stone Groins) at Atlantic Beach, Town of Hempstead, Nassau County, New York

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, N. Y.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract B.P. 56-51, Pt. IV may be examined and obtained at the office of Mr. Milton E. Goul, District Engineer, 325 West Main St., Babylon, L. I., New York.

The deposit for Plans and Proposal Forms for Contract B.P. 56-51, Pt. IV is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimate of Cost for Contract B.P. 56-51, Pt. IV is $775,000.00

Proposals for B.P. 56-51, Pt. IV must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of five percentum, (5%) of the amount of the bid. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Public Building Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications. The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUP'T. OF PUBLIC WORKS

Bids: November 6, 1956

Construction of Concrete Wharf

ADVERTISEMENT FOR BIDS

Sealed proposals will be received by the State of Alabama State Docks Department at the Office of the Director at the Alabama State Docks Office Building, Mobile, Alabama, until 10:00 A.M. Central Standard Time, November 6, 1956, and then publicly opened for furnishing necessary materials, labor, equipment, supplies, supervision, etc., and constructing the following described work:

Construction of concrete pile wharf section and sewer culvert, Berths 3-4-5 of Marginal Wharf for the Alabama State Docks Department, Mobile, Alabama.

A certified check or Bidder's Bond payable to the Alabama State Docks Department for an amount not less than five percent (5%) of the amount bid, but in no event more than Ten Thousand Dollars ($10,000.00), shall be filed with the proposal, the Bidder's Bond being prepared upon the form specified and signed by a bonding company authorized to do business in the State of Alabama.

Specifications, proposal forms, bid and performance bond forms, contract forms and plans will be on file in the office of Trotter-Ernest Engineering Co., 1814 Old Shell Road, Mobile, Alabama, the Birmingham Building Exchange, Birmingham, Ala., the Dodge Plan Room, Birmingham, Ala., and in the office of the State Docks Director, on and after October 9, 1956. Complete sets will be furnished to qualified prospective bidders on payment to Trotter-Ernest Engineering Co. of Fifty Dollars ($50.00). Refund of Twenty-five Dollars ($25.00) will be made to bona fide bidders who return sets in good condition within ten (10) days after opening of bids. Extra set will be furnished to bidders and to other interested parties upon payment of Twenty-five Dollars ($25.00), none of which will be refunded.

A performance bond in an amount not less than the sum bid will be required at the signing of the contract and, in addition, a bond in an amount not less than Fifty percent (50%) of the contract price, insuring payment for all labor and materials.

No bid will be considered unless the bidder, whether resident or non-resident of Alabama, is properly qualified to submit a proposal for this construction in accordance with all applicable laws of the State of Alabama. This shall include evidence of holding a current license from the State Licensing Board for General Contractors, Montgomery, Alabama and prequalification by the State Building Commission, Montgomery, Alabama. In addition, non-residents of the State will show evidence of having qualified with the Secretary of State to do business in Alabama.

The right is reserved to reject any and all bids and to waive informalities.

STATE OF ALABAMA
Alabama State Docks Department
Ward W. McFarland, Director

Bids: November 15, 1956

Power Authority of the State of New York

ST. LAWRENCE POWER PROJECT
ADVERTISEMENT FOR PROPOSALS
FOR THE
FURNISHING AND DELIVERY OF
HATCH COVERS FOR BARNHART
ISLAND POWER PLANT
SPECIFICATIONS NO. PA-5-15051
ST. LAWRENCE CONTRACT NO. P41

NOTICE TO CONTRACTORS: THE POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the manufacture, and furnishing of sixteen two-section, mobile, unit hatch covers and forty eight intake hoist hatch covers and delivery thereof f.o.b. the Authority's Classification Yard, Massena, St. Lawrence County, New York, until 10:30 A.M. Eastern Standard Time on the 15th day of November 1956, at the Authority's office, 270 Broadway, Room 1305, New York 7, New York, at which time the proposals will be publicly opened and read aloud.

Bids will be entertained for 16 hatch covers, 48 hatch covers or 64 hatch covers in accordance with the bidding schedules. The total weight of all hatch covers is estimated to be 380 tons. Erection at the site of installation will be done by Others.

Bids will not be restricted to American manufacturers.

Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall and Rich, 230 Congress Street, Boston 10, Massachusetts, and The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, and may be inspected by prospective bidders during office hours and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Twenty ($20.00) dollars per initial set of contract documents and Ten ($10.00) dollars per set for additional sets, no part of which will be refunded. Two sets must be returned with each bid.

Bids must be made in duplicate upon the proposal forms included in and bound with the Contract Documents. A bid guarantee will be required with each bid in an amount not less than 10 percent of the maximum gross sum price bid for any bid schedule.

The right is reserved to reject any or all bids.

W. S. Chapin
General Manager

PA-5-15051

Bids: November 15, 1956

Delaware River Port Authority of the Commonwealth of Pennsylvania and the State of New Jersey

Administration Building
Camden, New Jersey
WALT WHITMAN BRIDGE CONTRACT NO. P-14

Sealed bids will be received for "Cinder Bin Facilities" under the Philadelphia and Gloucester Approaches of the Walt Whitman Bridge, known as Contract No. P-14, at the office of the Executive Director of the Delaware River Port Authority, Administration Building, Bridge Plaza, Camden, New Jersey, until 2:30 P. M., Eastern Standard Time, Thursday, November 15, 1956, at which place and time they will be publicly opened and read by the Authority.

A more complete description of the work and full information for bidders are given in the Contract Documents and Specifications for this Contract, which may be obtained upon the deposit of $10.00 check, which will be remitted upon receipt of bid or the return in good condition of the copies so taken within thirty days after the opening of bids.

Each proposal must be accompanied by a certified check in the sum of $10,000 payable to the Delaware River Port Authority and drawn upon a National or State Bank or Trust Company having an office or place of business either in Philadelphia, Pennsylvania or Camden, New Jersey, and must not be enclosed with the sealed bid. The surety's consent must be shown. The bidder to whom the contract is awarded will be required to furnish a Performance and Labor and Materialman's Bond in the sum of 100 percent.

The Authority will afford prospective bidders an opportunity to inspect the site of the work.

The Authority reserves the right to waive any informalities in the bids received; to reject any or all bids, and to award the contract only to those experienced in this class of work and to the bidder whose proposal is deemed by the Authority to be most advantageous to the public interest.

DELAWARE RIVER PORT AUTHORITY
JOSEPH K. COSTELLO,
EXECUTIVE DIRECTOR

10/17/56
McS

Bids: November 20, 1956

Contract NYA-650.002

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
CENTRAL TERMINAL AREA
POOLS

Sealed proposals for the construction of pools, landscaping and bridge in the Central Terminal Area at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, November 20, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, October 25, 1956

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4787) will be received at Denver, Colorado, until November 29, 1956, for furnishing two 92-inch butterfly valves, with one set of handling equipment for Helena Valley Pumping Plant, Helena-Great Falls Division, Missouri River Basin Project, Montana. Delivery is desired within 390 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

Contractors Watch This Section—

for new projects. Publish your announcements through the proposal sections of *Engineering News-Record* and get their bids.

OFFICIAL PROPOSALS

Prequalification Date: October 25, 1956

Board of Education — Bureau of Construction — Notice Re: Prequalification Forms for Contractors

NOTICE IS HEREBY GIVEN THAT

The Director of the Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York, will receive applications for prequalification of bidders, from Contractors who may wish to submit bids for the proposed hereinafter specified contracts, as follows:

For general construction, plumbing and drainage, heating and ventilating, electrical work and lighting fixtures, elevator and shop equipment for:

BOROUGH OF BROOKLYN

P. S. 265, Park Ave. between No. Portland & No. Oxford Aves.

P. S. 289, Kingston Ave. between Prospect Pl. and St. Marks Avenue.

Sheepshead Bay H. S., Avenues X & Y, Batchelder and Coyle Streets.

BOROUGH OF QUEENS

J. H. S. 189, Queens, 14th St., between Barclay & Sanford Avenues. (Shop Equip. only)

P. S. 105, Beach 51st St., between Elizabeth Ave., & Beach Channel Drive, Arverne.

Thomas A. Edison Voc. H. S. 168th St., between Grand Central Parkway and 84th Avenue.

BOROUGH OF BRONX

J. H. S. 142, Baychester Ave., and East 233rd St.

BOROUGH OF MANHATTAN

P. S. 7, Lexington Ave., East 119 and 120th Sts.

P. S. 123, Edgecombe Ave., and West 140th St.

Prequalification application forms will have to be secured and must be submitted to the Director, Bureau of Construction Office, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City, New York.

Bids when advertised will be received from prequalified bidders only.

The time for submitting prequalification applications forms for the above contracts will expire on Thursday, October 25, 1956.

WILLIAM H. CORREALE
Director

Dated: Oct. 10, 1956.

Bids: November 20, 1956

Refuse Disposal Plant

ADVERTISEMENT FOR BIDS
VILLAGE OF SCARSDALE,
WESTCHESTER COUNTY, NEW YORK
NOTICE TO CONTRACTORS

Sealed bids for the construction of one of two types of Refuse Disposal Plant, (A, using circular furnaces; B, using rectangular furnaces) for the Village of Scarsdale in the County of Westchester, New York will be received by the Board of Trustees, Village Hall, Scarsdale, New York until four o'clock P. M. EST November 20, 1956 and will be publicly opened and read at a meeting of the Board that afternoon.

The Plans and Specifications cover two entirely separate and distinct Projects for a Refuse Disposal Plant one designated "Project A", using circular furnaces and the other designated "Project B", using rectangular furnaces, each with all accessories, and include the Plant Building, Furnaces and their Equipment, Chimney, Settling Basin, Access Road, Plumbing, Heating and Ventilating, Electric Work, Landscaping and other miscellaneous items of work. Each Project has been divided into various Contracts, permitting separated bids by different trades.

The Information for Bidders, Form of Bid, Form of Contract, Form of Performance Bond, together with the Specifications and Contract Drawings, may be examined at the office of the Principal Engineer in the Village Hall, Scarsdale, New York or at the office of the Consulting Engineer, Henry W. Taylor, 151 West Merrick Road, Freeport, New York until November 16, 1956.

Copies thereof can be obtained upon the deposit of $25.00 for each set. The full deposit will be returned to any person submitting a bid in accordance herewith and returning one copy of the Plans and Specifications in good condition within thirty (30) days following the award of contract or the rejection of the bid of such person; a refund of $10.00 will be made for any other sets of Plans and Specifications returned in good condition and within thirty (30) days after the award of contract or rejection of such Plans.

Checks for payment on the Plans shall be made payable to the Village of Scarsdale, New York.

Each bidder must deposit with his bid certified check or cash in an amount not less than five per cent (5%) of the amount of his bid. Any bidder submitting bids on corresponding Contracts for both Projects shall make one deposit based on the larger of the two bids. The successful bidder will be required to post a bond in form satisfactory to the Board of Trustees in the full amount of the Contract. Should said successful bidder fail to execute the Contract and post the required performance bond within seven days after notice of award, the check or cash will be forfeited to the Village of Scarsdale. Checks or cash of unsuccessful bidders may be held until the contract award is approved or all bids rejected, after which they will be returned within three days.

The Board of Trustees reserves the right to waive any informalities in any bid and to reject any or all bids for either or both Projects. If the Board decides to award contracts under either Project it may accept any bids made under such Project and will reject any bids made under the other.

No bidder may withdraw his bid after acceptance thereof by the Village of Scarsdale or within thirty (30) days after the actual opening thereof.

Reeves Newsom
Village Manager

Dated October 26, 1956

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4783) will be received at Government Camp, Canyon Ferry, Montana, until December 4, 1956, for furnishing labor and materials for Helena Valley Pumping Plant, Helena-Great Falls Division, Missouri River Basin Project, Montana. Location near Helena, Montana. Principal items are 10,000 cu. yds. excavation; 6,300 cu. yds. concrete; 500,000 pounds installing penstock and discharge pipe; installing two 5,000-hp, hydraulic turbine-driven pumping units; and other work. Completion time 730 days. For particulars, address Bureau of Reclamation, P. O. Box 2553, Billings, Montana; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

GOVERNMENT OF IRAQ DEVELOPMENT BOARD AND MINISTRY OF DEVELOPMENT, BAGHDAD. DIBIS AND BAGHDAD POWER STATIONS. CONTRACT NO. 7. TRAVELLING CRANES AND HOISTS. The Development Board and Ministry of Development of the Government of Iraq invite tenders from qualified firms for the supply, delivery on site, erection, and testing of the Travelling Cranes and Hoists for the Dibis and Baghdad Power Stations. Tender Documents may be inspected on and after October 8th 1956 until November 19th 1956, at the following addresses:—(1) Directorate General of Legal Affairs and Contracts, Ministry of Development, Development Board, Baghdad. (2) Embassies of Iraq, in Washington, London, Paris and Bonn. (3) Royal Legations of Iraq in Brussels and Rome. (4) Consul Honoraire of Iraq in Stockholm, and Egyptian Legations in Bern and The Hague. (5) At the office of the Consulting Engineers, Messrs. Electrobel-Traction et Electricite, 1, Place du Trone Brussels. Firms desiring to tender may obtain two sets of Contract Documents, on and after October 8th 1956 until November 19th 1956, from either the Directorate General of Legal Affairs and Contracts at the Development Board Offices, Baghdad, Iraq, or Messrs. Electrobel-Traction et Electricite, 1, Place du Trone, Brussels, Belgium, or the abovementioned Embassies and Legations on payment of five Iraqi Dinars or the equivalent of same. This sum will not be returned. All tender documents are to be submitted in English, and they must be accompanied by a deposit of ID.1000 (One Thousand Iraqi Dinars) which must be paid in cash to the Directorate General of Accounts of the Ministry of Development, and the receipt issued for such payment must be attached to the Tender Documents. Such cash deposit may be replaced by a Bank Guarantee from or through an approved Bank in Iraq. Tenders must be submitted in a sealed envelope endorsed clearly on the outside "Dibis and Baghdad Power Stations. Tender for Travelling Cranes and Hoists". They must be delivered to the Ministry of Development on or before 12 noon local time on December 3rd., 1956. If sent by post the tenders shall be registered, but tenderers must assure themselves of delivery to the Board in due time. A letter of capacity, method of procedure, articles of association, are to be submitted with the tender at the same time. Tenders not submitted within the time specified or not accompanied by a receipt of the deposit or Bank Guarantee shall be neglected. The attention of the Tenderers is called to the fact that early completion of the project is desired, and therefore an early completion date will be considered an important factor in the selection of the successful tenderer. The Development Board does not bind itself to accept the lowest or any tender. Minister of Development.

United States Department of Commerce, Bureau of Public Roads, October 11, 1956. Sealed bids will be received at the Inter-American Highway Office, Bureau of Public Roads, Room 4069, General Services Building, Washington 25, D. C., until 2 p.m., e.s.t., November 20, 1956 for the construction of the two Projects described below on the Inter-American Highway in southern Costa Rica, identified as Costa Rica Projects 75-56-5 and 75-6-6. Project 75-56-5 begins at San Isidro and extends for 43 miles to Platanares. Four bridges are included. The approximate quantities of the major items of work are as follows: 3,565,000 cu. meters Unclassified Excavation, 68,000 cu. meters Selected Borrow Base, 180,000 tons Crushed Stone Base, 11,926 cu. yards Class "A" Concrete (culverts), 1,512,700 lbs. Reinforcing Steel (culverts), 14,900 lin. feet Nestable Bituminous Coated Sheet Metal Culvert Pipe (18"-48"), 137,000 meters Barbed Wire Fencing, 3,850 cu. yds. Class "A" Concrete (bridges) 435,300 lbs. Reinforcing Steel (bridges), 683,000 lbs. Structural Steel (bridges). Project 75-56-6 begins at a Ballast Pit approximately 25 miles southeast of Palmar and extends for 32 miles to the Panama border. The approximate quantities of the major items of work are as follows: 1,810,000 cu. meters Unclassified Excavation, 31,000 cu. meters Selected Borrow Base, 135,000 tons Crushed Stone Base, 6,820 cu. yards Class "A" Concrete (culverts), 784,000 lbs. Reinforcing Steel (culverts), 13,600 lin. ft. Nestable Bituminous Coated Sheet Metal Culvert Pipe (18" to 60"), 90,000 meters Barbed Wire Fencing. Bids will be accepted only from United States or Costa Rica firms with a satisfactory record of performance in the United States or Costa Rica. Plans, Specifications and Proposal Forms are available upon request at the address given above or from the District Engineer, Bureau of Public Roads, Fifth Floor, Hotel Costa Rica, San Jose, Costa Rica. Award and execution of the contract under this bid is contingent upon availability of cooperator funds. C. D. Curtiss, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4782) will be received at Government Camp, Canyon Ferry, Montana, until November 27, 1956, for furnishing labor and materials for Helena Valley Tunnel and Canal, Station 3+14.30 to Station 149+00, Helena-Great Falls Division, Missouri River Basin Project, Montana. Location near Helena, Montana. Principal items are 26,900 cu. yds. open-cut excavation; 31,600 cu. yds. excavation in tunnel; 600,000 pounds steel supports in tunnel; 10,000 cu. yds. concrete in tunnel lining; and other work. Completion time 730 days. For particulars, address Bureau of Reclamation, P. O. Box 2553, Billings, Montana; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4786) will be received at Superior, Nebraska, until December 5, 1956, for furnishing labor and materials for Earthwork and Structures, Courtland Canal, Station 2472+48 to Station 2809+00, Miller Canal, Station 0+00 to Station 456+32.4, and Laterals, Wasteways, and Drains, Bostwick Division, Missouri River Basin Project, Nebraska-Kansas. Location near Courtland, Kansas. Principal items in four schedules are: 710,000 cu. yds. excavation; 2,570 cu. yds. concrete in structures; 14,700 lin. ft. concrete pipe; 197 metal slide gates; 24,000 pounds miscellaneous metalwork; and other work. Completion time 460 days. For particulars, address Bureau of Reclamation, P. O. Box 431, Superior, Nebraska; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: November 8, 1956

The Illinois State Toll Highway Commission

NORTHERN ILLINOIS TOLL HIGHWAY
NORTH ILLINOIS ROUTE
CONTRACT N-1A CONTRACT N-1B
CONTRACT N-1AB
ADVERTISEMENT FOR BIDS

Sealed Proposals will be received by the Illinois State Toll Highway Commission at the office of the Commission, 20 North Wacker Drive, Chicago 6, Illinois, until 11:00 o'clock, A. M. Central Standard Time on Thursday November 8, 1956 and immediately thereafter will be taken to the George Bernard Shaw Room of the Sherman Hotel, Randolph and Clark streets, Chicago, Illinois and publicly opened and read aloud.

Prospective bidders are hereby informed that the first sentence of Section 314a 38 of Chapter 121 of the Illinois Revised Statutes provides that—

"All contracts let for the construction of any work authorized to be done under the provisions of this Act where the amount thereof is in excess of the sum of $1,000, shall be let to the lowest responsible bidder or bidders on open, competitive bidding after public advertisement made at least fifteen days prior to the opening of bids, in a newspaper of general circulation published in each of the seven largest cities of the State, as determined by the last preceding Federal census in such manner and at such intervals as may be prescribed by the Commission."

CONTRACT N-1A

The work to be done under this Contract shall be completed in three hundred ninety (390) calendar days after the date specified in the Notice to Proceed, and consist of: The grading, drainage, paving, the construction of appurtenances, and the erection of precast concrete bridges for approximately 3.482 miles of the Northern Illinois Toll Highway in Construction Section N-1A thereof, beginning at a point about 3,140 feet south of Harlem Road at Northern Illinois Toll Highway Centerline Station 315+00 in Harlem Township, Winnebago County, Illinois, and extending northerly to a point about 1,640 feet south of Swanson Road at Northern Illinois Toll Highway Centerline Station 498+83 in Harlem Township, Winnebago County, Illinois.

The approximate quantities of the principal items of work are as follows:

Item	Approximate Quantity
Roadway excavation	946,000 Cu. Yds.
Special excavation	31,000 Cu. Yds.
Selected Subgrade	70,000 Cu. Yds.
Granular Subbase	35,000 Cu. Yds.
10" Reinforced PCC Pavement	102,000 Sq. Yds.
3" Bituminous Concrete Shoulders	66,000 Sq. Yds.
Guard Rail (Roadway)	10,000 Lin. Ft.
Right-of-Way Fence	38,000 Lin. Ft.
Structural Concrete	1,300 Cu. Yds.
Reinforcing Steel	251,000 Lbs.

CONTRACT N-1B

The work to be done under this Contract shall be completed in three hundred ninety (390) calendar days after the date specified in the Notice to Proceed, and consists of: The grading, drainage, paving, the construction of appurtenances, and the erection of precast concrete bridges and steel beam stringer bridges for approximately 3.814 miles of the Northern Illinois Toll Highway Construction Section N-1B thereof, beginning at a point approximately 1,640 feet south of Swanson Road at Northern Illinois Toll Highway Centerline Station 498+83 in Harlem Township, Winnebago County, Illinois and extending northerly to a point about 1,835 feet south of McCurry Road at Northern Illinois Toll Highway Centerline Station 745+00 in Roscoe Township, Winnebago County, Illinois.

The approximate quantities of the principal items of work are as follows:

Item	Approximate Quantity
Roadway Excavation	1,700,000 Cu. Yds.
Special Excavation	15,800 Cu. Yds.
Selected Subgrade	74,000 Cu. Yds.
Granular Subbase	39,400 Cu. Yds.
10" Reinforced PCC Pavement	111,000 Sq. Yds.
3" Bituminous Concrete Shoulders	70,500 Sq. Yds.
Guard Rail (Roadway)	13,400 Lin. Ft.
Right-of-Way Fence	42,000 Lin. Ft.
Structural Concrete	3,630 Cu. Yds.
Structural Steel, Erection	795,500 Lbs.
Reinforcing Steel	605,000 Lbs.

CONTRACT N-1AB

The work to be done under this Contract, which covers a combination of Contracts N-1A and N-1B shall be completed in three hundred ninety (390) calendar days after the date specified in the Notice to Proceed, and consists of the construction as above described for the individual Contracts, taken together.

Copies of the Plans, Specifications, Proposal Forms and other Contract Documents for said Contract are available for public inspection or purchase at the office of the Chief Engineer, The Illinois State Toll Highway Commission, Room 1654, 20 North Wacker Drive, Chicago 6, Illinois. These documents may be purchased from said Chief Engineer for the following sums, per set, which sums are non-returnable:

Standard Specifications for Northern Illinois Toll Highway.....$5.00
Proposal Form, Special Provisions and other Contract Documents, per copy.....$5.00
Plans, per set, per construction section.....$25.00

A bidder's Conference will be held in the Assembly Room, Suite 631, 20 North Wacker Drive, Chicago, Illinois, at 10:00 o'clock A.M. Central Standard Time on Friday, November 2, 1956.

All Proposals must be on the forms prescribed by the Commission, and must comply with the terms and conditions set forth in the Contract Documents.

A Contractor's Financial Statement and Experience Questionnaire, a Plan and Equipment Questionnaire, and a Statement of Current Contractural Obligations on forms supplied by the Commission will be required from all bidders.

Each Proposal must be accompanied by a Proposal Guaranty in the amount of five (5) percent of the total amount shown in the Proposal for the Contract, provided that the Proposal Guaranty will not be required in an amount exceeding $250,000.00 for any one contract. The Proposal Guaranty shall be in the form of an acceptable bid bond or a bank draft, certified check or cashier's check drawn on a solvent bank made payable to The Illinois State Toll Highway Commission.

In Accordance with the provisions of an Act of the State of Illinois entitled "An Act regulating wages of laborers, mechanics and other workmen employed under contracts for public works," approved June 26, 1941, as amended, the Commission has made an investigation and finds that the general prevailing wage rates in the locality in which the Work covered by this Contract is to be performed are as follows:

TRADE AND CLASSIFICATION	Hourly Wage Rate Straight Time	Over Time
BRICKLAYERS	$3.50	(a)
CARPENTERS	3.00	(a)
CEMENT MASONS	3.00	(b)
CEMENT MASONS, FORM SETTERS	3.10	(b)
IRON WORKERS, FENCE ERECTORS	3.25	(a)
OPERATING ENGINEERS ON		
Power shovels, cranes, graders, diggers, scoops, pavers, double drum mixers or 27E, pumpcretes, truck winches	2.95	(b)
Pavers, mixers 27E or less, rollers, spreaders, truck winches with "A" frames, power blades, motor patrols, turnapulls, highlifts, subgraders, finishing machines, material handlers, bull floats, tractors, bull dozers	2.75	(b)
Boilers, curb, sidewalk and culvert mixers, dinky locomotives, form graders, air compressors, welding machines, pumps, manually operated blade graders, firemen and oilers	2.30	(b)
LABORERS	2.45	(c)
Form Setter	2.45	(c)
Air Hoist operators, pebble placer operator, Mortarmen	2.20	(c)
Asphalt laborer and helper, tampers, smoothers, plant, street paving, grade separation brick-layer tenders, scaffold men, top laborers	2.10	(c)
Cement carriers	2.25	(c)
All other laborers	2.35	(c)
PAINTERS		
Sign	2.80	(c)
Sign helper	1.90	(c)
Brush	2.80	(c)
Open Structural Steel	3.05	(c)
PIPE FITTERS, PLUMBERS, CAULKERS	3.40	(c)
TEAMSTERS AND CHAUFFEURS ON		
Trucks over 16 Cu. Yd. capacity, oil distributors, 1 man operated	2.85	(c)
Six Wheel Trucks, 8 cu. yds. up to and including 16 yds. capacity	2.65	(c)
"A" Frame Trucks when used for transportation purposes	2.55	(c)
Oil Distributors, 2-man operation, mixer trucks over 3 cu. yds	2.50	(c)
Mixer trucks under 3 cu. yds	2.30	(c)
Four Wheel Trucks over 5 cu. yd. capacity	2.40	(c)
Four Wheel Trucks under 5 cu. yd. capacity, service trucks, air compressors, welding machines, pickup trucks and tractors, batch trucks 2-34E batches or less, mechanic helpers, greasers, teamsters, warehousemen, dockmen	2.25	(c)
All Others	2.45	(c)

(a) Double time for all overtime.

(b) Time and one-half for all time in excess of eight hours per day and forty hours per week. Double time for Sundays and holidays.

(c) Time and one-half for all time in excess of eight hours per day (8 a.m. to 4:30 p.m.) and 40 hours per week, Monday through Friday. After 8 p.m. Monday through Friday at double time. Saturday time and one-half to 4:30 p.m. Double time after 4:30 p.m. Saturday, Sunday and holidays.

(e) Time and one-half for over 8 hours in any one day and for Saturday. Double time for Sundays and holidays.

If the bidder is an out-of-state corporation, it shall be required to furnish a certificate from the Secretary of the State of Illinois as evidence that the corporation has complied with the Illinois Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Illinois.

The award of the above Contract, if any award be made, will be to the lowest responsible bidder or bidders. The Commission reserves the right to reject any and all proposals and to waive technicalities.

THE ILLINOIS STATE TOLL HIGHWAY COMMISSION
by Austin L. Wyman, Chairman.

Chicago, Illinois
October 16, 1956

U. S. Government

Department of Commerce, Bureau of Public Roads, October 10, 1956. SEALED BIDS will be received at the office of the Bureau of Public Roads, First National Bank Building, Florence, Alabama, until 10:00 a.m., C.S.T., NOVEMBER 9, 1956, for the construction of Project 3D4,5,6,7,8, Natchez Trace Parkway, Lee County, Mississippi. Four Reinforced Concrete Bridges, One Reinforced Concrete Box Culvert and approaches northeast of Pontocola. Aggregate length: 0.402 mile. The approximate quantities of the more important items are as follows: 34,080 cu. yd. Excavation and Borrow, 3,515 cu. yd. Concrete, and 619,000 lb. Reinforcing Steel. Minimum rates have been fixed as required by law. Plans, Specifications and proposal forms are available upon request at the address given above, or Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia. H. J. Spelman, Division Engineer.

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Work in New York City and New Jersey

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INCLUDE EDUCATION, EXPERIENCE, REFERENCES AND SALARY EXPECTED IN APPLICATION LETTER

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ENGINEERS

Long established firm of consulting engineers with world-wide practice needs both beginners and experienced civil, electrical, mechanical, and foundation engineers for interesting work on large dams, powerplants, and river control works. Permanent positions. Liberal employee benefits. Starting salaries dependent on qualifications. Please send complete resume to Hugo Niemi, Personnel Manager.

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400 W. Madison St. Chicago 6, Ill.

ARCHITECTURAL ENGINEER

Architectural Engineer between ages of 25 and 35 with interest in design of industrial buildings and structures.

Excellent opportunity with consulting engineering firm in Middle West. Liberal benefit plans and good working conditions.

Send resume of education and experience with statement of salary requirements to:

P-3222, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

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ARCHITECTS
DESIGNERS - DRAFTSMEN

FOR

ARCHITECTURAL
SANITARY-HIGHWAY
DEPARTMENT

Progressive Firm
Opportunity for Advancement
Permanent Staff Positions
Liberal Benefits
Application Form on Request
or
Submit Resume - Minimum Salary

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South Bend, Indiana

STAFF ENGINEER
MAINTENANCE SERVICES

Foreign Employment

To assist and advise operating management on all maintenance services and practices in major oil installation located in Saudi Arabia.

Must be graduate engineer with minimum of 10 years' planning and operations experience in heavy industrial and refinery installations. Proven supervisory ability and thorough knowledge of maintenance craft methods and equipment required. Minimum salary $1000 monthly plus allowances and generous benefits. Excellent promotional opportunities.

Write outlining personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 183

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Piping
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Structural

Men experienced in design of earthfill or concrete dams, spillways, penstocks and hydro electric power stations are desirable. Allied experience acceptable.

Send resume to
Manager of Employment & Placement
Industrial Relations Division

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Corporation
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For an immediate personal interview you may phone:
Paul Keating, Plaza 7-4600, New York City
Joe Braddick, Fairfax 3-2401, Houston, Texas
Bill Milligan, Tucker 1549, Los Angeles, Calif.
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Washington State Highway Commission

Immediate openings in Olympia for graduate civil engineers with or without experience to design and check the design of simple and indeterminate reinforced concrete and steel structures. Considerable hydraulic work on occasion. God opportunity for advancement. Progressive, non-political merit system. Minimum of 12 working days each of vacation and sick leave per year. Retirement system. Five step automatic wage increase schedule. $435 per month minimum starting salary. No overtime required. Write for application blank to William T. Read, Personnel Officer, Washington State Highway Department, Transportation Building, Olympia, Washington.

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Construction Engineer
Road Construction Inspector
Soils Engineers
Bridge Construction Inspector
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Must have college background and recent highway experience. Interviews arranged immediately for those qualified.

Send complete resume to:

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Civil & Structural

Permanent positions for squad leaders, designers and draftsmen with established consulting firm for large hydro-electric and irrigation projects. Liberal benefits. Salary commensurate with qualifications. Submit complete experience record and salary requirements.

ERIK FLOOR & ASSOCIATES, INC.
139 N. Clark St. Chicago 2, Ill.

ESTIMATOR

Young man for Estimating Department of large building contractor. Permanent position with opportunity for advancement with aggressive, growing company. Experience in estimating desirable but not essential. Write stating fully education, employment, salary requirements, military status and personal data.

BLOUNT BROTHERS CONSTRUCTION COMPANY
P. O. Box 949 Montgomery, Alabama

CIVIL ENGINEER
British Guiana

Very good opportunity for young, married engineer interested in South America. Transportation furnished; company housing available. Require 5 years construction experience. In letter give age, education, types of construction projects handled, and salary required.

P-3265, Engineering News-Record,
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

SALES ENGINEERS

Architectural degree or equivalent experience desired. Job locations in mid western and eastern parts of United States. Contact Architects, Builders. Selling fabricated curtain wall panels and related steel products. Attractive salary, company car, expenses. Newly created sales division within nationally known corporation, opportunities unlimited. Send written resume to Personnel Manager, P. O. Box 1107 Harrisburg, Penna. Indicate preference as to working location and indicate present earnings.

ENGINEER
(CIVIL—OVERSEAS)
HIGHWAY MATERIALS and TESTING ENGINEER

Position: In charge of modern highway testing laboratory and materials survey in Near East.

Requirements: 15-20 years experience. Ability to organize and direct a country wide materials survey and train personnel in testing operations.

Top salary—good living conditions—liberal benefits including paid transportation for wife.

P-2966, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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Positions in the fields of architecture, electrical & mechanical equipment, instrumentation & chemical process plants.

Also excellent opportunities and salaries for experienced men in designing of refineries, chemical & power plants, industrial & commercial buildings, highways. No fee.

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With 5 to 10 years' experience in Water Supply and Sewage Works, including design of treatment units, hydraulics, hydrology, structures, piping and the equipment involved in such work. We can offer the man meeting these qualifications an adequate salary and promising future with a prominent New York firm.

P-2968, Engineering News-Record
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

SENIOR ENGINEER
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FOREIGN EMPLOYMENT

Engineer with 15-25 years experience in highway design and construction supervision (including extensive administrative operations) required for highly responsible overseas position. Near East location. Liberal salary, transportation for family plus other attractive allowances and benefits. Send detailed personal history and experience record.

P-3156, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CIVIL ENGINEER

Young civil engineer interested in broad application of civil engineering.

Excellent opportunity with consulting firm. Liberal benefit plans and good working conditions. Location Middle West.

Send resume of education and experience with salary requirements to:

P-3223, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

RESIDENT ENGINEER AND DEPUTY RESIDENT ENGINEER

To supervise construction of $40,000,000 rockfill dam in the Middle East. Four-year completion schedule. Please send detailed experience and personal record. Specify salary expected and earliest date available.

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Jackson, Miss.

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Rochester, Pa., Jackson, Miss.

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Field Engineers with refinery or related construction experience.

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No Family Housing

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Industrial Relations Division

BECHTEL
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Are you worth up to

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Important permanent positions, paying from $6,500 to $10,000 a year with unusual future opportunity, have been created by the expansion program of our large, long-established engineering and construction firm. We need qualified engineers, designers and draftsmen experienced in structural, concrete, mechanical and piping design. Engineering offices are in several major American cities and Canada. Excellent working conditions. Generous company benefits. Our employees know of this ad.

Investigate this opportunity. Write today, giving age, education and experience. Your inquiry will be kept strictly confidential and will be answered promptly.

P-3067, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

HEAD OF STRUCTURAL DEPARTMENT

To supervise and administer Structural Designing and Drafting Department in home office of long established Boston consulting engineering firm.

Send resume of experience, references and record of past earnings to

P-3092, Engineering News-Record
Class. Adv. Div.,
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Experienced in Export Sales of Earth Moving Equipment. Age is of no importance. Salary $15,000. Midwest. Send resume to:

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NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

General Supt. Engr. for Sewers and water lines must be well experienced in supervisory installation and estimating, coordinating inside and outside. Old established Company. Resume held in confidence. Columbia Constr. Co. Inc., 2108 Columbia Ave., Indianapolis 2, Ind., WAlnut 3-1567, Mr. Farrer.

Engineers for municipal and industrial water supply, sewerage and treatment projects. Opportunities for permanent connection with long established firm of consulting engineers in mid-west. Both E.I.T.'s and engineers considered. Full information and references in first letter requested. P-3116, Engineering News-Record.

Soils Engineer—Civil or mechanical engineering graduate preferred. Training in soil mechanics desirable. Excellent opportunity with internationally known construction firm. Submit complete resume including salary desired. P-3040, Engineering News-Record.

Ditcher Sales Promotion Manager Wanted: Experienced man to head sales promotional activity of leading manufacturer of expanding ditcher line. Must have sales experience and be familiar with design and application of both wheel and boom type machines. Position involves overall sales management responsibilities with distributors and key customer contacts. Age preferably under 45. Management level compensation. Provide complete experience resume with application. Reply to: Personnel Director, Barber-Greene Company, Aurora, Illinois.

Wanted: Pile driving superintendent capable of organizing, setting up, and prosecuting large projects. Must know equipment. State qualifications in full and salary desired in first reply. P-3124, Engineering News-Record.

Wanted: For Chicago area—engineer capable of estimating and managing all types of piping projects. P-3132, Engineering News-Record.

Structural Engineers and Draftsmen for permanent positions in Boston Area with old established engineering firm. P-3212, Engineering News-Record.

Structural Designer in the office of Engineer of Bridges for a Midwestern Railroad with headquarters in Chicago. $7,000 per year starting salary for graduate engineer with minimum of 3 years experience in bridge design. Reply to P-3213, Engineering News-Record.

Service Manager for fast growing equipment house Caribbean area must know Caterpillar Line also Excavating Equipment, permanent. Foreign language unnecessary. P-3216, Engineering News-Record.

Estimator for North Jersey Area—Experienced in heavy construction work, process piping, pipe lines, dams and bridges. Please submit complete resume, noting salary range and availability. P-3277, Engineering News-Record.

Teaching appointments for September, 1957, available at university-associated College of Engineering in field of Civil Engineering. Salary and rank commensurate with experience and academic qualifications. Primary teaching field open as present faculty is flexible; preference, if any, would be in sanitary engineering and allied fields. Suburban location, Middle West, adjacent to large industrial center. P-3268, Engineering News-Record.

Position Vacant: Township Engineer. Degree in Engineering or qualified for Pa. license. Salary $6200-7200. Higher salary available depending on experience. Apply Twp. Mgr. 1390 Duncan Ave., Allison Park, Pa.

Electrical Superintendent: The City of Fresno, California, will receive applications until November 30, 1956 for an examination to fill one position of Electrical Superintendent. Training and experience equivalent to a college degree in electrical engineering and six years electrical engineering experience including at least two years in a supervisory capacity and registration as an Electrical Engineer in the State of California. $610 to $742 per month with benefits. Application and information available in Room 203, City Hall, Fresno, California. Fresno Civil Service Board.

POSITIONS VACANT

Designing Engineers for sewage treatment projects. State age, qualifications and salary desired. Send resume to Gardner & Sterling, Consulting Engineers, P. O. Box 74, Salisbury, Maryland.

Estimator—Metropolitan area concrete products manufacturer. Should have estimating experience in industrial and institutional building field. Permanent. Company paid welfare plan. Write for appointment. P-3255, Engineering News-Record, 330 W. 42nd Street, New York 36, New York.

Civil Engineers: A public utilities organization has vacancies in Water Distribution, sewer design and construction engineering-attractive benefits—work in a growing key industrial area—live in the suburbs—send resume to: Personnel Director, The Metropolitan District, 115 Broad St., Hartford, Conn.

Assistant Professor, or instructor, to teach Sanitary and other Civil Engineering subjects. MS preferred, but BS degree considered. Salary dependent upon qualifications, up to $6000. Immediate appointment available. Write to Head, Civil Engineering Department, University of Akron, Akron 4, Ohio.

University Teaching position open in the fields of engineering drawing and descriptive geometry, Dept. of Engineering Mechanics, University of Nebraska. Engineering degree is necessary. Opportunity to do graduate work. Rank and salary based on applicant's education and experience. Write inquiries to E. J. Marmo, Professor and Chairman of Department, Lincoln 8, Nebraska.

EMPLOYMENT SERVICES

Salaried Positions $6,000 to $35,000. We offer the original personal employment service (established 46 years). Procedure of high standards individualized to your personal requirements. Identity covered. Particulars—R. W. Bixby, Inc., 559 Brisbane Bldg., Buffalo 3, N. Y.

POSITIONS WANTED

Party Chief, age 27 married exp. heavy construction & preliminary surveys. Prefer N. J. PW-3138, Engineering News-Record.

Engineer, retired, own office, desires design, estimating, steel, reinforced concrete. PW-3160, Engineering News-Record.

Controller—seeks similar position. Over 12 yrs. engineering & construction contracting accounting experience plus 4 years public accounting. Top supervisor all financial & accounting detail. Or, will work with group of medium & smaller companies on part time arrangement to handle all bookkeeping, cost reports, income tax returns, etc. Will also install system and supervise your personnel. Work area to include N.Y.C. Westchester & Putnam counties and Fairfield county in Conn. PW-3111, Engineering News-Record.

Construction Manager or Administr. assist. Civil Engr., estimating, cost-control & management specialist. Available now. Miller, 1609 N. McKinley, Okla. City 6.

Seasoned Structural Engineer, registered in several states, used to handle large structural projects of any kind, particularly industrial buildings and bridges, is available for new connections, domestic, Europe or S.A. PW-3073, Engineering News-Record.

Construction Engineer Executive, 20 years experience in all phases of contractual earth moving, both dry land and hydraulic suction dredging, excavation and embankment etc., from initial investigation thru final completion. Co-ordination of labor relations, management diplomacy, both field and administrative, negotiation of special problems that require ingenuity. Either domestic or foreign PW-3108, Engineering News-Record.

Concrete Superintendent 32 years in concrete field batch & crushing plants. Experience, heavy construction, pre-cast, pier, power plants, industrial buildings, foundations, refineries, complete charge of placing & handling of concrete jobs up to 70,000 yds. Domestic or Foreign job. PW-3175, Engineering News-Record.

Contractors Manager or Assistant. 25 years in similar capacities with several outstanding Midwestern Construction Companies. Experience and ability covers supervision, estimating, bidding, negotiating, managing all types of building and heavy construction work. Available at reasonable notice. PW-3182, Engineering News-Record.

POSITIONS WANTED

Building Construction, over 30 years experience, estimating, buying, office management. Industrial, institutional and commercial projects. PW-3181, Engineering News-Record.

Struct Engr, EIT, BSCE, MS credit, 27, exp hvy constr estimating, design and equip cost control. Interest bridges and large structures. Extensive advanced studies reinforced and prestressed concrete design and fabrication, available Nov., will relocate. PW-3186, Engineering News-Record.

Resident Engr—Project Mgr or Asst. Civil Engr, BSCE, PE, 32, Diversified Engr exp supervision and design roads, drainage, sewage, water, marine const, dredging bridges. Foreign-Europe or SA preferred. Now Employed. PW-3219, Engineering News-Record.

Supt—Sewer and Water Lines—available Nov 1st., prefer field supervision, 23 yrs experience. PW-3206, Engineering News-Record.

Project manager graduate professional engineer, 43. Heavy background in power and industrial plants—engineer — design — construction—management. Present project terminating. Staff available. PW-3287, Engineering News-Record.

Soil Scientist-Surveyor would like full or part time employment with engineering or contracting firm in Wisconsin or eastern Minnesota. 20 years experience. Gordon Wing, 226-13th Street, Eau Claire, Wisconsin.

Civil Engineer with broad construction experience and municipal work, desires to relocate. PW-3281, Engineering News-Record.

BSEE MIT PE NY 14 years exp. bldg. & airport design, electronics maintenance seeks connection involving occasional travel or assignment to Far East pref. Japan. PW-3256, Engineering News-Record.

Architects' Field Superintendent or Owners' Representative. Experienced on public and industrial buildings, estimating, expediting and cost control. Available immediately for assignment anywhere in U. S. PW-3237, Engineering News-Record.

By experienced heavy equipment salesman, connection with major shovel-crane manufacturer as representative in Southern territory. Background includes experience on distributor-manufacturer relations level, financing, promotion, and service. Well acquainted in Texas, Louisiana, Mississippi and Alabama and offshore operations. Complete details upon request. PW-3238, Engineering News-Record.

Construction Engineer. M. Sce Degree Norwegian 36. 10 years diversified experience, administrative, project supervision, structural design concrete, buildings and hydroelectric project. 3 years field experience in Middle East. Location preferably West. East, Southeast or foreign. PW-3248, Engineering News-Record.

YOUR ORGANIZATION

Is it complete?
Are you expanding it?
Making Replacement?

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Classified Advertising Division

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330 W. 42nd St., New York 36, N. Y.

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All equipment will be demonstrated at our Lancaster yard.

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Phone: LAncaster 4-0546

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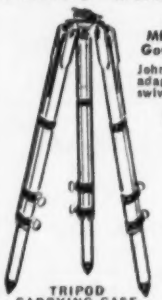

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Pollution Progress Slowed

PREOCCUPATION WITH PRIORITIES for the disbursement of federal aid for sewage works construction under the new Water Pollution Control Law was quite obvious among state sanitary engineers in session at this month's meeting of the Federation of Sewage & Industrial Wastes Associations in Los Angeles (ENR Oct. 18, p. 24). Such preoccupation may be expected to continue until the states develop their priority-establishing procedures. Consequently there is an urgent need for the states to settle the priority question quickly and get back to other facets of their problem.

For the fact of the matter is that the $50 million of authorized federal aid has brought contract awards for sewage works to a halt in many places, while cities wait and wonder if they will be certified for aid and given priority under the current year's allocation of construction grant money to their state. Many cities are ready to go ahead with construction of facilities badly needed to maintain progress in the battle against water pollution. But some of them require aid and others don't. For those who must be aided the power of the dollar will be a necessary incentive to get projects started. For the others the power of persuasion to go ahead immediately must be relentlessly applied.

It was disturbing in Los Angeles to hear state sanitary engineers express concern that allocation of aid money would support only a fraction of their states' current sewage works construction programs. Obviously, that is the case—for it was the intent of the law to aid only the needy fraction. The sooner the states can single out the projects which deserve financial help, the sooner they can make known positively to the others that they are expected to go ahead without aid.

Engineers in water pollution control agencies at all levels of government, working without the incentive of federal aid up until now, have done the remarkable job of bringing annual sewage works construction from roughly $400 million to about $600 million this year. Admittedly, Pittsburgh's single $80-million project had much to do with this big jump. But this project in itself is a classic example of what the powers of persuasion can do. It took time, but there is no denying the job done in the Allegheny County Sanitary Authority by chief engineer John Laboon and his organization in bringing 65-odd communities to enter into and finance an authority project.

The whole problem is basically how to make the federal aid an incentive to increased sewage works construction. Part of that problem is the matter of establishing which projects should get some of the aid money available. The other part of the problem is seeing that the planned projects which should not get aid are not delayed. Time, of course, is of the essence, and it now rests pretty squarely on the state sanitary engineers to clear up the present confusion, put the priority problem behind them, and get back to their total problem of maintaining the now favorable rate at which pollution abatement projects have been put under construction.

A Fine Appointment

THE NEED FOR THE RIGHT MAN to fill the newly created position of Federal Highway Administrator under the Highway Act of 1956, emphasized in an editorial on this page two months ago (ENR Aug. 16), has been handsomely met by the appointment of Bertram D. Tallamy. Equally gratifying is the selection of John A. Volpe to fill the post until Mr. Tallamy can take over next January. Mr. Volpe deserves considerable praise for agreeing to serve in the pinch-hitting role since he is known to be anxious to return to contracting after a number of years as Commissioner of Public Works of Massachusetts.

Both of these men have the technical background, the highway planning experience and the highway administration know-how so necessary for one who is to lead the multi-billion-dollar attack on our outmoded highway facilities. There is some cause for regret that the appointments had to be surrounded with so many trappings of political strategy, since the more nonpartisan the highway program can be, the better. Nevertheless, regardless of the outcome of the election, a properly high standard of ability for the Federal Highway Administrator's position has been established, and this is all to the good.

In Bert Tallamy the nation will have a man eminently qualified to tackle without delay the many pressing jobs incident to getting the highway program rolling. First as director of public works of New York State and later as chairman of the New York Thruway Authority he has gained familiarity with long-range highway planning and financing on the largest projects available in the country. An engineer by training and practice, he is also recognized as an administrator of great competence. Unusually effective in developing confidence in his work on the part of politicians and the public alike, he should be able to transfer these attributes onto the national level with equal success.

One of Mr. Tallamy's greatest assets for his new job is his knowledge of the Bureau of Public Roads and its necessary relationship with the state highway departments. He is in a position, therefore, to superimpose his new office on this organizational framework with a minimum of friction and a maximum of efficiency. Awaiting him is no more important problem than this, although in addition there are the studies Congress asked for on an accurate costing for the $28-billion program, on permissible vehicle weights on traffic safety and on reimbursement to the states for up-to-standard roads already built.

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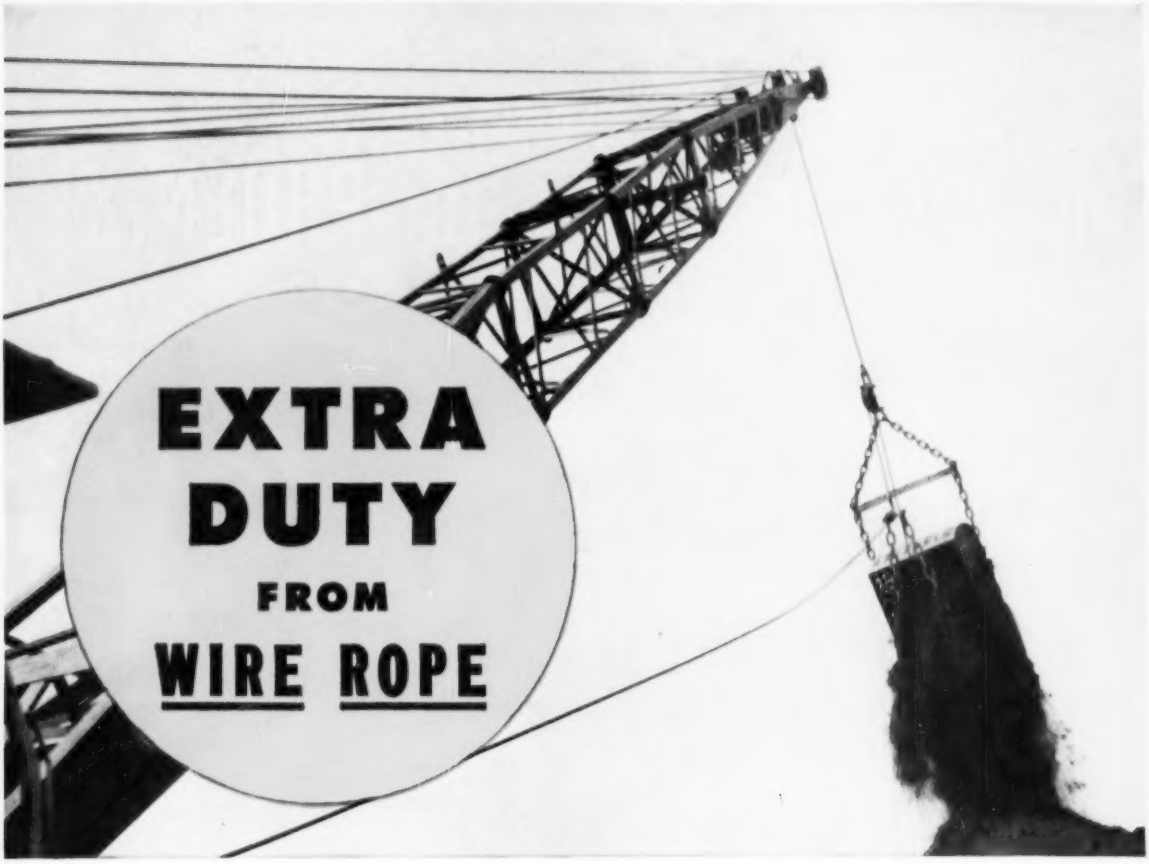

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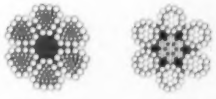

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